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Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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ctccaggccg ccgatgtcac tatcactgtt aatggtcggg tagtcgctaa accctgcact     120
attcaaacca aagaagctaa cgttaatctc ggggatcttt atacgcgcaa tctgcaacaa     180
cctggttctg catctggctg gcacaatatt actttgtcat taaccgattg tccggctgaa     240
acaagtgcag tgacggcaat cgtgacaggt tcaactgaca atacgggtta ttacaaaaat     300
gaaggtactg ccgaaaatat tcagatagag cttagggatg accaggatgc gacgttaaaa     360
aatggcgata gcaaaacggt tattgttgat gagatcactc gtaatgcaca gtttccactt     420
aaggcaagag ctatcacggt gaatggaaac gcaagccagg gaacgatcga ggcgctaatc     480
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<212> Type : DNA
<211> Length : 504
      SequenceName : SEQ ID 431
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
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ctgagcggaa aaacaaaaga gcgtgtttat ctagccgaag aaggaggccg aaaagtcagt     180
caactcgact ggaaattcaa taacgctgca attattaaag gtgcaattaa ttgggatttg     240
atgccccaga tatctatcgg ggctgctggc tggacaactc tcggcagccg aggtggcaat     300
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caccctgata cacaactcaa ttatgccaac gaatttgatc tgaatatcaa aggctggctc     420
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attggcttga ctggaagtta tcgttatgaa gattttgagc taggtggcac atttaaatac     660
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ggtaatactt cactttatga tcacaatgat aacacttcag actacagcaa aaatggtgca     900
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<212> Type : DNA
<211> Length : 954
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      SequenceDescription :

Sequence
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gatacaggaa cgtattccgg ctccgtttac accgtgaaac gggggatac gctatatcgt      180
atttcgcgca ccacgggaac cagcgtaaaa gagctggcgc gactgaacgg catttccccc     240
ccttacacca ttgaagttgg tcagaaacta aaactgggtg gggcgaaaag tagcagtagt     300
acacgtaaat caaccgccaa atcaacgacc aaaaccgcat cggttacacc gtcatcagcg     360
gtaccgaaat cttcctggcc gccagtaggg caacgttgtt ggttatggcc aacgacaggg     420
aaagttatca tgccgtattc gacagcagat ggcggcaata aagggattga tatctcagct     480
ccacggggta cacctattta cgccgcgggt gcaggaaagg tggtgtatgt gggcaaccag     540
ctgcgtggct acggtaatct catcatgatt aaacacagtg aagattacat tacggcttac     600
gcccataatg acacgatgct ggtaaataat gggcaaagcg tgaaggctgg gcaaaaaatc     660
gccaccatgg ggagcacgga tgcggcatct gttcgcctgc atttccagat tcgttaccgt     720
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<212> Type : DNA
<211> Length : 780
      SequenceName : SEQ ID 433
      SequenceDescription :
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Sequence
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<213> OrganismName : Escherichia coli O157:H7
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aaggttaaag acctgacgcc cggcgaactg accgctgagt cctatgacga cagttatctc     180
gatgatgaag atgcggactg ggccgcgacc ggacaggggc agaaatccgc tggagatacc     240
agcttcacgc tggcgtggat gcccggagag caggggcagc aggcgctgct ggcgtggttt     300
aatgaaggtg atacccgtgc ctataaaatc cgcttcccga acggcacggt cgatgtgttc     360
cgcggctggg tcagcagtat cggtaaggcg gtgacggcga aggaagtgat cacccgcacg     420
gtgaaagtca ccaacgtggg acgtccgtcg atggcagaag atcgcagcac ggtaacagcg     480
gcaaccggca tgaccgtgac gcctgccagc acctcggtgg tgaaagggca gagcacgacg     540
ctgaccgtgg cattccagcc ggaaggcgca accgacaaga gcttccgtgc ggtgtctgcg     600
gataaaacaa aagccaccgt gtcggtcagt ggtatgacca tcaccgtgaa aggtgttgct     660
gcaggcaagg tcaacattcc ggtcgtatcc ggtaatggtg agtttgctgc ggttgcagaa     720
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<212> Type : DNA
<211> Length : 741
      SequenceName : SEQ ID 434
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
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cagttcaccg ccgggcagaa acaggatatt gatgtgacca cgctctgctc cacagagcag     180
gagaacatca atggtctggg ggcgtcgtct gagatttcca tgtcgggcaa tttttatctg     240
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gtgctgtttc cgtccggtaa gggctttaaa ttcctggcgg aagtgcgcca gcacacctgg     360
tcatccggta ccaacggcgt ggtggctgca acgttctcac tgcgtctgaa aggcaaaccg     420
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accggtgcgc tgctgacaat gtcagtcagt gccaacgggg gaacgccgcc gtataaatac     540
gcctggaaga aggatggtca gccggttgac gggcagacga cagacacctt cagtaagcca     600
ggtgcgcagt ccgctgatgc ggggaaatat acctgtgtgg tgaccgattc ggcagagaaa     660
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<212> Type : DNA
<211> Length : 717
      SequenceName : SEQ ID 435
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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atgcattata tgagtgataa cgacagtaaa gatggcgacc agagttatat ccgttttggt     180
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tttgttgatt ataaaatcaa ccaactggat agcgataaca aattgaatat taataatgat    1020
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<212> Type : DNA
<211> Length : 1056
      SequenceName : SEQ ID 436
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
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accatgactt tccagttccg taatccaaac tttggtggta acccaaataa tggcgctttt     120
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ggtattgaaa caccctcagc gttagataac tttactcagg ccatccagtc acaaatttta     240
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attgttgata ttgctaaccg cgatggtcaa ttgcagttga acgtgacaga tcgtaaaacc     360
ggacaaacct cgaccatcca ggtttcgggt ttacaaaata actcaaccga tttttaa        417

<212> Type : DNA
<211> Length : 417
      SequenceName : SEQ ID 437
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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ctgcactact tctctgatga tgctagcagc gatggcgaca tgtcatatgc ccgtatcggt     180
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ttatttgatc aagaaggttc aggtaacggt aatggacgta aacttgctaa agagaacggc     600
gacggttcag tatgtccact tcctatgact ttgactttgg tttaa                     645
<212> Type : DNA
<211> Length : 645
      SequenceName : SEQ ID 438
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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caacttcacg atggtacggt gaataacagc ggtattgcgt cggcgcgcgt taacgctcag     180
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<212> Type : DNA
<211> Length : 2424
      SequenceName : SEQ ID 439
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 747
      SequenceName : SEQ ID 440
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
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<212> Type : DNA
<211> Length : 2241
SequenceName : SEQ ID 441
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 396
SequenceName : SEQ ID 442
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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ggcacctgga ttgccggtgt tggttaccgc ttctaa 516
<212> Type : DNA
<211> Length : 516
SequenceName : SEQ ID 443
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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tctgcacatg cagcagaagg agagcataca atttctctgg ggtatgcgca ctttcagttt 120

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ccgggactga aggattttgt aaaggatgcg actgctcata acagggagac tttcagtcat    180
ttcgtcaaca gaaactactt ttcttcattg ggcgaatata cagatggtcg ggtcagtgga    240
tatgaaggca aggataaaaa tccacagggc attaatatca ggtatcgcta cgagataacg    300
gatgattttg gcgttatcac ctcttttaca tggacgcgtt ctctcactaa ctcacagaca    360
tttattgatg tgcagtcagc cgatcatacc aggaagatta agaatccggc agcttctgcc    420
agaacggata tcagggcgaa ttactggagt ctgttagcgg ggccttcatg gcgggttaat    480
cagtacatga gtttatatgc gatggcaggg atgggcgttg ctaaagttag cgctgacctg    540
aaaattaagg acaatattaa cagtagtggc ggattttctg aaagcaacag cacgaaaaaa    600
acctcccttg cgtgggctgc aggtgcacag tttaacctga atgagagtgt tacactggat    660
gtggcttacg aaggttccgg ctctggcgac tggcgcacga gtggcgttac tgctggcatt    720
ggcctgaaat tctga                                                    735
<212> Type : DNA
<211> Length : 735
      SequenceName : SEQ ID 444
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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cctgcatggg cgtctgagca gcaggccacg ctgagcgcgg ggtatcttca tgtctcgacg    120
aacgctcccg gtagcgataa tcttaacggg attaacgtga aataccgtta tgaattcacg    180
gacacgctgg ggctggtgac gtcattcagc tatgcaggag acaggaatcg ccagattacc    240
cgttacagcg atacccgctg gcatgaagat tccgtgcgta accgctggtt cagcgtaatg    300
gcggggccgt ctgtgcgcgt gaatgaatgg ttcagcgcgt atgcgatggc gggagtggct    360
tacagccgtg tgtcgacttt ctccggggat tatctccgcg taactgacaa caaggggaaa    420
acgcacgatg tgctgaccgg aagtgatgac ggtcgccaca gcaacacgtc tctggcgtgg    480
ggggctggcg tgcagtttaa cccgaccgaa tccgtggcca ttgatattgc ttatgaaggc    540
tccggcagtg gcgactggcg cactgacggt ttcatcgtgg gtgtcggtta taagttctga    600

<212> Type : DNA
<211> Length : 600
      SequenceName : SEQ ID 445
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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cctgcatggg cgtctgagca gcaggccacg ctgagcgcgg ggtatcttca tgcccggacg    120
agcgctcccg gtagcgataa tcttaacggg attaacgtga aataccgtta tgaatttacg    180
gacacgctgg ggctggtgac gtcattcagc tatgcaggag acaagaatcg ccagcttacc    240
cgttacagcg atacccgctg gcatgaagat tccgtgcgta accgctggtt cagcgtaatg    300
gcggggccgt ctgtgcgcgt gaatgaatgg ttcagcgcgt atgcgatggc gggtgtggct    360
tacagccgtg tgtcgacttt ctccggggat tatcttcgcg taactgacaa caaggggaaa    420
acgcacgatg tgctgaccgg aagtgatgac ggtcgccaca gcaacacgtc tctggcgtgg    480
ggggctggcg tgcagtttaa cccgaccgaa tccgtggcca ttgatattgc ttatgaaggc    540
tccggcagtg gcgactggcg cactgacggt ttcatcgtgg gtgtcggtta taagttctga    600

<212> Type : DNA
<211> Length : 600
      SequenceName : SEQ ID 446
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atgcgtaaac tttatgccgc cattttgtcc gcagccatct gtctggccgt atccggcgcg     60
cctgcatggg cgtctgagca gcaggccacg ctgagcgcgg ggtatcttca tgcccggacg    120
agcgctcccg gtagcgataa tcttaacggg attaacgtga aataccgtta tgaatttacg    180
gacacgctgg ggctggtgac gtcattcagc tatgcaggag acaagaatcg ccagcttacc    240
cgttacagcg atacccgctg gcatgaagat tccgtgcgta accgctggtt cagcgtaatg    300
gcggggccgt ctgtgcgcgt gaatgaatgg ttcagcgcgt atgcgatggc gggtgtggct    360
tacagccgtg tgtcgacttt ctccggggat tatcttcgcg taactgacaa caaggggaaa    420
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acgcacgatg tgctgaccgg aagtgatgac ggtcgccaca gcaacacgtc tctggcgtgg     480
ggggctggcg tgcagtttaa cccgaccgaa tccgtggcca ttgatattgc ttatgaaggc     540
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<212> Type : DNA
<211> Length : 600
      SequenceName : SEQ ID 447
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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cctgcatggg cgtctgagca gcaggccacg ctgagcgcgg ggtatcttca tgcccggacg     120
agcgctcccg gtagcgataa tcttaacggg attaacgtga aataccgtta tgaatttacg     180
gacacgctgg ggctggtgac gtcattcagc tatgcaggag acaagaatcg ccagcttacc     240
cgttacagcg atacccgctg gcatgaagat tccgttcgta accgctggtt cagcgtaatg     300
gcggggccgt ctgtgcgcgt gaatgaatgg ttcagcgcgt atgcgatggc gggtgtggct     360
tacagccgtg tgtcgacttt ctccggggat tatcttcgcg taactgacaa caaggggaaa     420
acgcacgatg tgctgaccgg aagtgatgac ggtcgccaca gcaacacgtc tctggcgtgg     480
ggggctggcg tgcagtttaa cccgaccgaa tccgtggcca ttgatattgc ttatgaaggc     540
tccggcagtg gcgactggcg cactgacggt ttcatcgtgg gtgtcggtta taagttctga     600

<212> Type : DNA
<211> Length : 600
      SequenceName : SEQ ID 448
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
atggtcatga gccagaaaac cctgtttaca aagtctgctc tcgcagtcgc agtggcactt      60
atctccaccc aggcctggtc ggcaggcttt cagttaaacg aattttcttc ctctggcctg     120
ggccgggctt attcagggga aggcgcaatt gccgatgatg caggtaacgt cagccgtaac     180
cccgcattga ttaccatgtt tgaccgcccg acattttctg cgggtgcggt ttatattgac     240
ccggatgtaa atatcagcgg aacgtctcca tctggtcgta gcctgaaagc cgataacatc     300
gcgcctacgg catgggttcc gaacatgcac tttgttgcac cgattaacga ccaatttggt     360
tggggcgctt ctattacctc taactatggc ctggcaacag agtttaacga tacttatgca     420
ggcggctctg tcgggggtac aaccgacctt gaaaccatga acctgaactt aagcggtgcg     480
tatcgcttaa ataatgcatg gagctttggt cttggtttca acgccgtcta cgctcgcgcg     540
aaaattgaac gtttcgcagg cgatctgggg cagctggttg ctggtcagat tatgcaatct     600
cctgccggga agactcctca agggcaagca ttggcagcta ccgccaacgg tatcgacagt     660
aataccaaaa tcgctcatct gaacggcaac cagtggggct ttggatggaa cgccggtatc     720
ctgtatgaac tggataaaaa taaccgctat gcactgacct accgttctga agtgaaaatt     780
gacttcaaag gtaactacag cagcgatctt aatcgtgtgt ttaataacta cggtttgcca     840
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gcttacacca gctggagtca gttccagcag ctgaaagcga cctcaaccag tggcgacacg    1020
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tactacgatg ataactggac cttccgtacc ggtatcgcct ttgatgacag cccagttccg    1140
gcacagaatc gttctatctc cattccggac caggaccgtt tctggctgag tgcaggtacg    1200
acttacgcgt ttaataaaga tgcttcagtc gacgttggtg tttcttatat gcacggtcag    1260
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ggtactaact ttaactacgc gttctga                                        1347
<212> Type : DNA
<211> Length : 1347
      SequenceName : SEQ ID 449
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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ggcaacaata tcgccaactc cgccacctac ggctttaaat caggcacggc ctcttttgcc     120
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gatatgtttg ccggttcgaa agtgggactg ggggtaaaag ttgccggtat cactcaggac     180
tttaccgatg gcacgaccac caacaccggg cgtggtctgg acgttgctat cagccagaac     240
ggttttttcc gtctggtaga tagcaacggt tcggtgttct acagccgtaa cggacaattt     300
aagctggatg aaaatcgtaa cctggtgaat atgcaaggtt tacagctgac gggttacccg     360
gcaaccggta cgccgccgac tattcagcaa ggggcgaatc cgactaacat ttcgatcccg     420
aataccctga tggcagcgaa aactaccacc acggcgtcga tgcagatcaa cctgaattcc     480
agcgatccgc ttccctctgt taacgcattt gatgccagca atgcggatag ctataacaaa     540
aaaggttcgg tgactgtttt cgacagtcag ggtaatgctc atgacatgag cgtctacttt     600
gtgaagaccg gggataataa ctggcaggtc tacacccagg atagcagtga tccaacaggt     660
acagccgagc ctgcaatgaa gctggtgttt aatgccaatg gcgttctgac ctcaaatcca     720
acagagaata ttaccaccgg cgcaattaac ggcgcagaac ccgccacgtt tagcctgagc     780
ttcctcaact ccatgcagca aaataccggc gctaacaaca ttgtggcaac cacccagaat     840
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aactattcca acgaacaaac ccaactgctg gggcagattg tactggcgaa ctttgccaac     960
aacgaaggtc tggcatccga aggcgacaac gtctggtctg cgacgcaatc ttctggcgtg    1020
gcgctgttgg ggacagccgg gacgggcaac tttggcaccc tgaccaacgg tgcgttggaa    1080
gcgtccaacg tcgatctcag taaagaactg gtcaatatga tcgttgccca gcgtaactat    1140
cagtctaacg cccagaccat caaaacccag gaccagatcc tcaacacgct ggttaactta    1200
cgctaa                                                               1206
<212> Type : DNA
<211> Length : 1206
      SequenceName : SEQ ID 450
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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caatcatccg cttgggctaa ctgtacaaac acacagatag gtcaaactga agatggtcgg     120
acagcgctta ttgagttcgg aaaaattaat atgaccgaca cctattttgc gccagcaggt     180
tcactcctcg cgacaacggt cgtacctccc actaactaca catcaggtgg cgcgacagga     240
agctccgtat tgtgggaatg tgatgcaaca gatttgccaa acatctattt tctggtcgct     300
accaatggcg acgaccgcgt gggggcttt tacgatgcag gcgggcctga tggtctgagt     360
gatgtctatg ccacctggtt cgcttttgtc ggtctcaagc agaccatggc gggcgtgacg     420
cttggtcgtt actggaagaa agtgcccatc accagttatg ccactcaggg aactaaaatc     480
cagattcgct tacaggatat ccctcctctt catgctgagc tttatcgcat cagtacgcta     540
cctgatacat cagcaacaac aagttggtgc ggtaataata atacagatag tagtggagtc     600
ggattcgcaa aaccttccgg tacaatctat aactgtgttc agcccaatgc ctatattcag     660
ctttccggta ccagcggcat tttatttggt catgatgagc ccggcgaaga tagttctgtt     720
cattgggatt tctggggtgc tgataatggt tttggttacg gaatgcgttc ggccaatcga     780
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attgcagaag cacaactgaa tgcgggcatg gaaagtaccg gtaattttaa tgtccgcgtc     900
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gtgtctgaag gtgcatatac agcggcgcaa aaactgggga ttatcaatag caacggcggc    1020
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tacatttcta acagtgctca ccccgatacg gcgatgacgc tggttggtca accgggcatc    1140
gcgaagttaa cccccggagg aaatgcagcg ggtggtatc ctgtatttga aggggcaaca     1200
ttagaaggtg cgactcaccc cggatactcc agctatagtt actcttttat cgcccggttg    1260
aagaaactgc caaatcagac agtcagtgcg ggaaaagtgc gggcaacggc ttatatattg    1320
gtgaaaatgc aatga                                                     1335
<212> Type : DNA
<211> Length : 1335
      SequenceName : SEQ ID 451
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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ctttgtattg gcatcacgcc tgtggctcag gcactcgccg ccgaagggca aactaacgcg     120
gatgacacgc tggttgtcga agcatcaacg ccttcgcttt atgcgccaca acaatctgcc     180
gatccgaaat tctcgcgtcc ggtagcggat actacccgca cgatgacggt gatttctgaa     240
caagtgatta aagatcaggg cgcaaccaac cttaccgatg cgctcaaaaa cgtccccggc     300
gtgggtgcgt tttttgcggg tgagaacggt aactccacca ctggcgacgc catttatatg     360
cgcggtgctg atacctctaa cagtatttat attgatggca ttcgcgatat cggcagcgtc     420
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tcgcgcgaca ccttcaatac tgagcaggtc gaagtgatta aagggccttc cggcaccgac     480
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acggcgaccc tgaatcattc cggaaaagtt gatacgcata acttttacgg cacggattcc     900
gattacgacg attcgaccac cgacaccgcc accatgcgtt ttgagcacga tatcaacgat     960
aacaccacca ttcgcaacac tacccgttgg tcgcgcgtga agcaggatta cctgatgacg    1020
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ggtcagacgg ataccttcgc aatttacgca ttcgatacgc tgcaaatcac ccgtgatttt    1380
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gcagggaata tcactcccgc gtggcaggtg attggcggct atacccagca aaaagcaacc    1920
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cacgccttca ccttatggag ccaatatcag gcaaccgatg atatctctgt tggcgcgggc    2040
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accgaaggtt actgggtcgc cgatgccaaa ctggggtata gggttaatcg caatctcgac    2160
ttccagctaa acgtctacaa cctgtttgat accgattacg tcgcctcaat caataagagc    2220
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tga                                                                  2283
<212> Type : DNA
<211> Length : 2283
      SequenceName : SEQ ID 452
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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ttgagccagg ccgagaacct gatgcaagtt tatcagcaag cacgccttag taacccggaa     120
ttgcgtaagt ctgccgccga tcgtgatgct gcctttgaaa aaattaatga agcgcgcagt     180
ccattactgc cacagctagg tttaggtgca gattacacct atagcaacgg ctaccgcgac     240
gcgaacggca tcaactctaa cgcgaccagt gcgtccctgc agttaactca atccattttt     300
gatatgtcga aatggcgtgc gttaacgctg caggaaaaag cagcagggat tcaggacgtc     360
acgtatcaga ccgatcagca aaccttgatc ctcaacaccg cgaccgctta tttcaacgtg     420
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gcccgcgcgc agtacgatac cgtgctggcg aacgaagtga ccgcacgtaa taaccttgat     600
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tctatcagta gtattaacgc ctacaaacaa gccgtagttt ccgctcaaag ctcattagac    1140
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aatgcgctga gcaaaccggt ttccactaat ccggaaaacg ttgccccgca aacgccggaa    1380
cagaatgcta ttgctgatgg ttatgcgcct gatagcccgg cacccgtcgt tcagcaaaca    1440
tccgcacgca ctaccaccag taacggtcat aaccctttcc gtaactga                 1488
<212> Type : DNA
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<211> Length : 1488
      SequenceName : SEQ ID 453
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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cacgctgaag gtaaattttc cctgggcgca ggcgtaggtg tcgttgaaca cccatataaa     120
gattacgata ccgatgttta cccagtaccg gtaatcaact atgaaggcga taacttctgg     180
ttccgtggct taggtggtgg ttactacctg tggaatgacg caacggataa actttcaatt     240
accgcttact ggtcgccgct ttacttcaaa gctaaagaca gtggcgatca ccaaatgcgt     300
cacctggatg accgtaagag caccatgatg gctggtctgt cttatgctca ctttacccag     360
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tccgctcgca gcggtctgcg tggctataac tcgaacgaca gctggagccc ttacctggag     600
ctgagcgcca gctacaactt cctcggcgac tggagtgttt acggtaccgc gcgctacacc     660
cgtctgtctg atgaagttac tgacagcccg attgtggata aatcctggac tggcctgatt     720
tctaccggga tcacctacaa attctga                                         747
<212> Type : DNA
<211> Length : 747
      SequenceName : SEQ ID 454
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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aacgcagctg aaaacgacaa accgcagtat ctttccgact ggtggcacca gagcgttaac     120
gttgtcggaa gctatcacac ccgtttcgga ccgcagatcc gcaacgatac ctaccttgag     180
tacgaagcat tcgctaaaaa agactggttc gacttctatg gttatgcgga tgcgccggta     240
ttcttcggcg gtaactccga tgcaaaaggt atctggaacc acggttctcc tctgtttatg     300
gaaatcgaac cacgtttctc catcgacaag ctgaccaata ctgaccttag cttcggtccg     360
ttcaaagagt ggtacttcgc gaacaactac atttacgaca tgggtcgtaa taaagatggt     420
cgccagagca cctggtacat gggtctgggt accgatatcg acactggcct gccgatgagc     480
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gagtgggacg gttaccgttt caaaattaaa tactttgtgc cgattaccga tctgtggggc     600
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attctggctc tgaactacga tcactggcac tactctgtcg tagctcgtta ctggcacgac     780
ggtggtcagt ggaacgacga tgcagaactg aacttcggca acggcaactt caacgttcgc     840
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<212> Type : DNA
<211> Length : 885
      SequenceName : SEQ ID 455
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
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cttgccggtt gcatagcact ggcactatta ccttctgccg cttttgctgc accagccact     120
gaagaaacgg tgattgttga gggttcagcc acagctccag atgatggcga aaatgattac     180
agcgtaacgt ctacctctgc gggtaccaaa atgcagatga ctcaacgtga tattcctcag     240
tcggtcacta ttgttagcca gcagcggatg gaagatcagc agttacaaac gctgggcgaa     300
gtgatggaaa acacgctggg gatcagcaaa agtcaggcgg attccgatcg tgctctttat     360
tattcccgcg gattccagat cgataactat atggttgatg gtatccccac ctattttgaa     420
tcgcgctgga atctgggcga cgcactttct gatatggcac tgtttgaacg cgtagaagta     480
gtgcgtggcg cgacaggact catgaccggg acgggtaatc catctgcggc aattaatatg     540
gttcgaaaac acgcgaccag tcgtgaattt aaaggcgatg tctcggcgga atacggtagc     600
tggaacaaag aacggtatgt ggcggattta caaagcccac tcaccgaaga cggtaaaatc     660
cgcgcgcgaa ttgtcggcgg ctaccagaat aacgactcat ggctggaccg ctacaatagt     720
gaaaagacct tcttctccgg cattgtcgat gctgatttag gcgatcttac gacgctttca     780
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gccggttacg aatatcagcg cattgatgtt aatagcccaa cctggggcgg tttaccgcgc    840
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tatgtcgatg cctatgtaaa caaagcggat ggtatgctgg ttgggccata cagtaattat   1080
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caggataatg tcgctcagtc caccggtaca cctatccccg gcagcaacgg cgaaaccgcc   1740
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accgacaact ggcagctgac atttggcgca acgcgctata ttgcagagga taacgaagga   1860
aacgccgtta atcctaatct gccacgcacc acggttaaaa tgttcaccag ctatcggttg   1920
cctgtcatgc cagagttgac agtcggcggt ggtgttaact ggcaaaatcg cgtgtatacc   1980
gacaccgtga caccgtatgg caccttccgc gccgagcaag gtagctacgc gttggtggat   2040
ctcttcaccc gctaccaggt gacgaaaaac ttctcgttac aggggaacgt caataacctg   2100
ttcgacaaaa cctacgatac caacgtggaa ggttctatcg tctacggcgc accgcgtaat   2160
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<212> Type : DNA
<211> Length : 2190
      SequenceName : SEQ ID 456
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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atggtgatgg gagaagctgc aattgctgca ccgctgccac aatgggcgaa tgccccagcg    120
gtaacgccag ttgcccaatt atctttacag gaaagtatat tacgcgcctt tgcgcgaaat    180
cccggtgtca ctcaacaggc ggcgcagata ggtattggcg aagcgcaaat tgatgaagcc    240
aaaagtgcct ggtatccgca cgttggatta accggcaacg cggggccgtc ccgacaaacg    300
gactccagcg gcaggcttga taacaacgtt tcgtatggca taaccctgac acaactggtg    360
tatgactttg gtaaaactaa caacgatatc aatctgcaaa ctgccgcccg tgacagctac    420
cgctttaaat tgatggcaac cttaaccgat gttgcagaga aaacggcgac tgcctacatg    480
gaagtcagtc gttatcaggc tttgtgcgat gcggctcaac gcaatattca ctcgctggaa    540
aacgtctaca acatggcggc attgcgcgct aacgcaggcc tgaactcatc gtcggatgaa    600
ttacaggccc agacgcgtat tgccggaatg cgctcaacgc tggagcaata tcaggcgcag    660
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agcgaccgct cgtattggga tgatcagcta caactgaacg ttaacgcgcc gctgtatcag    960
ggcggcgcgg tttctgccca ggtgcaacag gccgaagggc aacaaaaaat ctctgcctcg   1020
caggtcgaac aggcaaaact ggatgtgctg caacgagcgt ctgtggcata tgcgaactgg   1080
accggcgcac ggggtcgtga agaagccggt ttagcgcaat ccgaaagtgc gcacaaaacg   1140
cgagatgtgt accaaaatga atataaattg ggtaaacgca gtctgaatga tctattaacc   1200
gtcgaacaag atgtctttca ggcgcaatcg gctgaaataa atgccaatta tgatggctgg   1260
gtcgccgccg taaattatgc cgctgcggtg aataacctta ttccattagc gggaattaaa   1320
cagggcttat acaacgactt acccgacttg aaataa                             1356
<212> Type : DNA
<211> Length : 1356
      SequenceName : SEQ ID 457
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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tttgcagcac caatgattca tgcaaccgac actgcaacga ccaaagatgg cgaaacaatc    120
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actgttacag cggatgcaaa taccgcaact gaggcgaccg atggttatca acctctgagc      180
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gttagcgatc aggttctgga aaatcagaat gcaacgacgc tggatgaagc gctttataac      300
gtcagtaacg tggtacagac caatacatta ggcggaactc aggacgcctt tgtacgtcgt      360
ggttttggtg ctaaccggga tggctccatc atgaccaacg gcctgcgaac tgtacttcct      420
cgcagtttca acgccgccac agaacgtgtg gaagtgctaa aaggtccggc ctccacgctg      480
tatggcattc tcgatcctgg tggattgatt aacgtcgtga ccaagcgccc ggaaaaaaca      540
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gaagattact ggcgaaactt cggtaaagag cgcagtacat ttattgcccc gtcactcacc      720
tggtttggtg ataatgcaac agtaaccatg ctctattccc atcgggacta taaactccg       780
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gcagaatatc atctcaatag ccagtggaca gcgcgctttg attacagcta cagccaggat      960
aaatacagcg acaatcaggc tcgcgttacc gcgtatgatg caacgacagg aacgctgaca     1020
cggcgtgttg atgcaactca gggatctacc cagcgtatgc attctactcg tgcggatctg     1080
caagggaatg ttgatattgc tgggttctat aatgagattc tgggtggggt gtcatatgaa     1140
tattatgatc ttctgcgcac agatatgatt cgctgtaaaa acgctaaaga tttcaatatc     1200
tacaaccccg tttatggcaa taccagcaaa tgcacaacgg tttcggcgtc ggacagtgat     1260
cagacgatca aacaggagag ctactcagct tatgcacagg atgcgctcta tctgaccgat     1320
aactggattg ccgtcgccgg gatccgctat cagtattaca cgcagtatgc gggtaaaggc     1380
cgtcctttta atgtcaatac tgacagccgc gatgaacaat ggacgcccaa actggggtta     1440
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caatcgtcaa ttgccagcta catcggagat cttccaccgg aatcatctaa tgcttacgaa     1560
gtcggggcaa aattcgagct gttcgatggt ataaccgcag atattgcgct gtttgatatc     1620
cataaacgta acgtgttgta taccgaaagt attggtgatg aaaccatcgc caaaacggca     1680
ggccgcgttc gttcaagagg ggtagaagtc gaccttgcgg gagcattaac tgaaaacatt     1740
aatatcattg ccagctacgg ctataccgat gctaaggttc tggaagatcc tgattatgca     1800
gggaaaccat tgccgaatgt tcctcgtcat accggttcgc tattcctgac ctatgacatt     1860
cataacatgc caggcaataa cacactgacg tttggcggtg gtggacattg cgtaagccgt     1920
cgttcggcaa ccaatggggc tgactattat ctgccaggct atttcgttgc cgatgccttc     1980
gccgcataca aaatgaaatt gcagtatccg gtcacactgc aattaaacgt caaaaacctg     2040
tttgataaaa cgtattacac ctcttccatc gccacaaata atctggggaa tcagattggc     2100
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<212> Type : DNA
<211> Length : 2142
      SequenceName : SEQ ID 458
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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caagaggcaa cggtgaaaga ggtgcatgac gcgccagcgg tgcgtggcag tattatcgcc      120
aatatgctgc aggagcatga caatccgttc acgctctatc cttatgacac caactacctc      180
atctacaccc aaaccagcga tctgaacaaa gaagcgattg ccagttacga ctgggcggaa      240
aatgcgcgta aggatgaagt aaagtttcag ttgagcctgg catttccgct gtggcgtggg      300
attttaggcc cgaactcggt gttgggtgcg tcttatacgc aaaaatcctg gtggcaactg      360
tccaatagcg aagagtcttc accgtttcgt gaaaccaact acgaaccgca attgttcctc      420
ggttttgcca ccgattaccg ttttgcaggt tggacgctgc gcgatgtgga gatggggtat      480
aaccacgact ctaacgggcg ttcagacccg acctcccgca gctggaaccg cctttatact      540
cgcctgatgg cagaaaacgg taactggctg gtagaagtga agccgtggta tgtggtgggt      600
aatactgacg ataacccgga tatcaccaaa tatatgggtt actaccagct taaaatcggc      660
tatcacctcg gtgatgcggt gctcagtgcg aaaggacagt acaactggaa caccggctac      720
ggcggcgcgg agttaggctt aagttacccg atcaccaaac atgtgcgcct ttatactcag      780
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<212> Type : DNA
<211> Length : 870
      SequenceName : SEQ ID 459
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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ttagttcggg tgatgagtgc gccgcagctg tacgttggtc aggaggcacg ctttggtggc 180
aaagtggttg cggtacaaaa ccagcaaggg aaaacccgcc tggaaattgc taccgtaccg 240
ctggacagcg gagccagacc gacgctggga gaaccttctc gcggtcgcat ttatgccgat 300
gtgaacggtt ttctggaccc ggtggatttc cgtggacaac tggttacggt agtcgggcca 360
atcactggtg cggttgacgg aaaaatcggc aacacgccct ataaatttat ggtgatgcag 420
gcaacaggtt acaaacgttg gcatttaacc cagcaggtga ttatgccgcc tcagccgatt 480
gatccctggt tttatggcgg tcgtggctgg ccctatggcc acggcggatg ggctggtat 540
aatcccggcc ccgcgagagt acaaacagtt gtaactgaat aa 582
<212> Type : DNA
<211> Length : 582
SequenceName : SEQ ID 460
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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gatgatggtc agcaacagac agtaagtgta ccgcagcctg cggtatgtaa cggccccata 120
gttgaaatta gcggggcgga cccgcgtttc gaaccactga acgcgacggc aaatcaggat 180
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gtaactcaaa atggcgcggt ctggcggatc cagcttggcc cattcgccaa caaagccgaa 1020
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<212> Type : DNA
<211> Length : 1089
SequenceName : SEQ ID 461
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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gttatcggtg caattggcgg tgctgttctt ggtggtttcc tgggaaatac tgttggtggc 240
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ggcgtacaga gtgcaatgaa caaaacgcaa ggtgtcgagc tggaaattcg taaagacgat 360
ggtaatacca tcatggtggt acagaaacaa ggcaacactc gtttctctcc gggccaacgt 420
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<212> Type : DNA
<211> Length : 468
SequenceName : SEQ ID 462
SequenceDescription :

Sequence

<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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tcagctggag gcggcggtgg ttcgtccatc gacgctgtca tggttgattc aggtgcggta 180

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gttgagcagt acaaacgcat gcaaagccag gaatcaagcg cgaagcgttc tgatgagcag     240
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gaacgcctga agcaacttga gaaagagcgg ttagctgctc aggaacagaa aaagcaggct     360
gaagaagccg caaaacaggc cgagttaaag cagaagcaag cggaagaggc ggcagcgaaa     420
gcggcggcag atgctaaagc gaaggccgaa gcggatgata aagctgcgga agaagcagcg     480
aagaaagcgg ctgcagacgc gaagaaaaaa gcagaagcag aagccgccaa agccgcagcc     540
gaagcgcaga aaaaagccga ggcagcagct gcggcgctga agaagaaagc ggaagcggca     600
gaagcagctg cagctgaagc aagaaagaaa gcggcagcag agaaagctgc agccgacaaa     660
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gcaaaagctg ccgcggaggc agatgatatt ttcggtgagc taagctctgg taagaatgca     840
ccgaaaacgg ggggaggggc gaaagggaac aatgcttcgc ctgccgggag tggtaatact     900
aaaaacaatg gcgcatcagg ggccgatatc aataactatg ccgggcagat taaatctgct     960
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aaactggcac ccgatggtat gttactggat atcaaacctg aaggtggcga tcccgcactt    1080
tgtcaggctg cgttggcagc agctaaactt gcgaagatcc cgaaaccacc aagccaggca    1140
gtatatgaag tgttcaaaaa cgcgccattg gacttcaaac cgtaa                   1185
<212> Type : DNA
<211> Length : 1185
      SequenceName : SEQ ID 463
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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accaaacaag aaactaaaac cgttaatatt atttccattc ttcccgcaaa agttgccgta     180
gacaactccc aaaataaacg gaacgcacaa gccttcggcg cgcttattgg cgcagtcgct     240
ggcggtgtta tcggccacaa cgtcgggtct ggcagcaatt ccggaacgac ggcaggtgca     300
gttggcggcg gagctgtagg cgcggcagcg ggttctatgg tgaatgataa aacccttagtg    360
gaaggtgttt ctttaacgta taaggaaggc accaaagtgt atacctctac tcaggtgggt     420
aaagagtgcc agtttacgac aggtttagcc gttgttatta ccacgacgta taacgaaacg     480
cgtattcagc caaataccaa atgtcctgaa aagagctaa                          519
<212> Type : DNA
<211> Length : 519
      SequenceName : SEQ ID 464
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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ggcggttcca atgacggcac tcgtgagtac ctggaaaatc tcaatggtat ctataaccta     180
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tctaccacca ataatatgga attgtgtgct gacgcgaaaa aagtccaacg gcaaatatta     660
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<212> Type : DNA
<211> Length : 747
      SequenceName : SEQ ID 465
      SequenceDescription :

Sequence
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<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
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gtgattgcaa ttattgctat tttagccacc atcgcaattc cttcttatca aaattatacc      120
aaaaaagctg cggtatccga attactgcaa gcgtctgcgc cttataaggc tgatgtggaa      180
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acagtaaaag ggaatggcac attggcaaat atggaatata ttttgcaagc taaaggtaat      360
gctgcagcag gtgtaacttg gacaacaacc tgcaaaggaa cggatgcctc tttatttcca      420
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<212> Type : DNA
<211> Length : 450
      SequenceName : SEQ ID 466
      SequenceDescription :

Sequence
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<213> OrganismName : Haemophilus influenzae Rd
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gcagaaaata aagggagatt ttctgttggt gcaacaaatg tggaagtgag agataaaaat      180
aaccactctt taggcaatgt tttacctaat ggcattccga tgattgattt tagtgttgtg      240
gatgtagata aacgcatcgc cacattgata aatccacaat atgtagtagg tgtaaaacac      300
gttagtaacg gcgtgagtga actacatttt gggaacttaa atggcaatat gaataatggc      360
aatgctaaat cgcaccgaga tgtatcttca gaagaaaata gatatttttc cgttgagaaa      420
aatgagtatc caactaaatt gaatggaaaa gcagtaacta ctgaagatca aactcaaaaa      480
cgccgtgaag actactatat gccacgtctt gataaatttg ttaccgaagt tgcaccaata      540
gaggcttcaa ctgcaagtag tgatgctggc acatataatg atcagaataa atatcctgct      600
tttgtaagac taggaagtgg tagtcaattt atttataaaa aaggagataa ttacagctta      660
attttaaata atcatgaggt tggaggcaat aatcttaaat tggtgggcga tgcctatacc      720
tatggtattg caggcacacc ttataaagta aaccacgaaa ataatggact aattggtttt      780
ggcaattcaa aagaggaaca cagcgatcca aaaggaatat tatctcaaga tccgcttacc      840
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gaatggaata tttataaacc tgaatttgca aaaactgttc tagataaaga tactgcaggt     1020
tctttaactg gttctaacac ccaatacaat tggaatccta ctggcaaaac aagcgttatt     1080
tctaatggtt ctgaatctct aaatgttgat ttattcgata gtagtcagga tactgactct     1140
aagaagaaca atcacggaaa aagtgtgact cttagaggaa gtggaacgct taccttaaat     1200
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aatggacgtt acgatttgta taacccagag gtggaaaaaa gaaatcaaac tgtcgatacg     3000
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gaagaaatag cccgtgttga aacaccagtt ccaccacctg cgcctgctac accatcagag    3120
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aatcaatatg attttgctta caacgtggaa aaccaacagc aatataacgc agggcttaaa    4980
ttgaaatatc ataatgtgaa attaagtcta ataggcggat taacaaaagc gaaacaagcg    5040
gaaaaacaaa aaactgcaga attaaaacta agttttagtt tttaa                    5085
<212> Type : DNA
<211> Length : 5085
      SequenceName : SEQ ID 467
      SequenceDescription :

Sequence
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<213> OrganismName : Haemophilus influenzae Rd
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gcttcaatga atgttaatcg aactgccgtt gtatctgtga caacaaaaga tagccgtgca     180
atacaagaga ttgcgagtta tacgaaacac ggggaactga ttaaattaaa tgcatcccca     240
agtgttacac aattatttca gcaagtgatg cagcaaaatt taattagtaa aggttttaga     300
gttgggcaat taaatggttc aaatgcgtgg gtaactgtgg atgtgcgtga atttggtacg     360
caagtagaac aaggtaatct tcgttataaa cttaatacca aaattcaagc gacagtttat     420
gtacaaggtg cgaaaggttc gtataataaa tcatttaatg tcacgcactc acaagagggc     480
gtatttaatg cgggcaatga tgaaattcat aaagtgctat ctcaaacttt taatgatatt     540
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<212> Type : DNA
<211> Length : 600
      SequenceName : SEQ ID 468
      SequenceDescription :

Sequence
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<213> OrganismName : Haemophilus influenzae Rd
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gatttcaatt cagatcaaac ggctgaaaat acatcgccag cttggcaagt gctttacaca     180
acccatttac aaagttgctc gccgattcat agtggagaaa atttcgcacc catccctttg     240
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tataaacaac taaaaaatca accgcaccta agccaagatc tgattaaatg gcaagaaaat     300
tggcaagcct gcgatcaact acaaatgaat ggtgcggtat tagaacaaca atctttggca     360
gaaatttccg atcatcaaag tacgctttca aaacacggac gatatttagc tcaagaaata     420
gaaaaagaaa ctggcatacc gacttactat tatttatatc gtgtaggtgg gcaatcttta     480
gaatctgaaa aatcccgttg ctgcccttct tgtggtgcaa attgggcgtt aaaagacgcg     540
atttttgata cctttcattt taaatgcgat acctgtcgat tagtttcgaa tctatcgtgg     600
aattttttgt aa                                                         612
<212> Type : DNA
<211> Length : 612
      SequenceName : SEQ ID 469
      SequenceDescription :

Sequence
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<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
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ggtttatctc aaactaaagc aaacggtagt aacaatacaa gagttggacc tcgcgtatcc     120
gtgggttata aagtaggaaa tacacgtgtt gcgggtgatt atactcatca tggaaaagtt     180
gatggcacaa aaattcaagg tttaggtgca tcagtattat atgattttga cacgaattct     240
aaagtgcaac cttatgttgg tgctcgtgta gcgactaatc aatttaaata caccaatcgc     300
gcagaacaaa agtttaaaag ttcttctgat attaagctcg gatatggggt tgtagcaggt     360
gcaaaatata agttagatgg caactggtac gcaaatggtg gagttgagta caatcgttta     420
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<212> Type : DNA
<211> Length : 486
      SequenceName : SEQ ID 470
      SequenceDescription :

Sequence
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<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
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cgagcaagtt tacctgttcg tgctggtcag cgtgtgactg acaatgatgt ggctaatatt     180
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gaacctttac tgtcagcatt acatttaaat gatactttcc gccgtagtga cattgcagat     900
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ggacctaacg caatttatgc agaacatggt aatggtaatg gtacttttaa gaagataagt    2040
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agtgtttgga atactaagtg gaaatcggat aagagtgggt tagataacaa tgtattaaaa    2220
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tggcaatctc ctattgggcc attggtattc tcttatgcca aaccaattaa aaaatatgaa    2340
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<212> Type : DNA
<211> Length : 2388
      SequenceName : SEQ ID 471
      SequenceDescription :

Sequence
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<213> OrganismName : Haemophilus influenzae Rd
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caaaaaggcg aagctgatcg atatttatgt caagatgata gagttgttcg tgttgtacac     180
gccacgcata aaaaatacaa aaaaaatttg cattatgtta ctgtcacttt tcaaggcgta     240
tcagaaaaac taaccttaat gatttctgaa cgtggtaaaa attacgccaa tattcgttgg     300
atgtggcaag agcgtgatga ttttagtacg ctaaaaacga atctcggcga aattttagca     360
acgcaatgtg tctcacaaac aagtgaacgc ttatctggac aataa                     405
<212> Type : DNA
<211> Length : 405
      SequenceName : SEQ ID 472
      SequenceDescription :

Sequence
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<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
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caaccaacca accaaccaac caaccaacca accaaccaac caaccaacca accaaccaac     180
caaccaacca accaaaatag taatgtttct gaacaactag aacaaataaa tgtatctggt     240
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aaacctcaca cttgtgcaac gacttatgag tggaatgcta acctttgtcc tcgagttgat    1860
cctgaatttt cttacttatt acccattaaa acaacaggaa aatcagtcta tctctttgat    1920
aattttgtta taactgatta tttatctttt gatttgggtt atcgttatga caatatccat    1980
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caacaaaata ttgactatat cgccaaacag aacaaaaaat ataaagcaca ttcttatagt    2160
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<212> Type : DNA
<211> Length : 3033
      SequenceName : SEQ ID 473
      SequenceDescription :

Sequence
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<212> Type : DNA
<211> Length : 3867
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      SequenceDescription :

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<212> Type : DNA
<211> Length : 2235
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      SequenceDescription :

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<212> Type : DNA
<211> Length : 3714
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<211> Length : 1584
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      SequenceDescription :

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acgaacaaca ttttaaacaa caacaccgga ggcaatgtcg caggggcgtt gagtaacgct     240
ttctcccaat acctttattc gcttttaggg gcgtatccca cgaaactcaa tggtaacgac     300
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<211> Length : 1563
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      SequenceDescription :

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<213> OrganismName : Helicobacter pylori, strain J99
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acgaattata gcgtcctaaa cgctctcatc aggcagtccg ccgaccccaa cgccatcaat     240
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agctatgcga tcagcccttg tggtcccggt aaagacacaa gcaaaaatgg gggcgttcaa     420
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gcttatcaaa tcatccaaaa ggcttttggg agcagcggaa aagatattcc tgccttaagc     600
gacaccaaca cagaactcaa attcacaatc aataaaaata atggaaacac gaatacgaat     660
aataatggag aagaaattgt tacaaaaaat aacgctcaag ttcttttaga acaggctagc     720
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gcgagtagtg gtagtttatg ggaaggaata tatttgaaag gcgatgggag cgcttgcggg     840
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ggctttcaag tggctataa gcaattcttt gggaaaaaca aacgatgggg cgcaaggtat     1620
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gatgtctgga cctatggcgt ggggagcgat ttgttagtga atttcatcaa cgataaagcc    1740
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tggcttaatt ctcagtatgt gaatttagcg aacgtgaata attattataa ggccaaaatc    1860
aacacggcga atttccaatt cttattcaat ctgggtttga gaatgaacct cgctaggaaa    1920
aagcatagag cgaccgataa cgcggcccaa catggcattg aactaggcac aaagatcccc    1980
acgatcaaca cgaattacta ttctttgcta ggcactacct tgcaatacag aaggctttat    2040
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<212> Type : DNA
<211> Length : 2073
      SequenceName : SEQ ID 483
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
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gtgaaaaaca ctggagcatt acaaaatctt gcagacagat acgataactt gagcaacctt     180
ttaaaccaat acaattactt aaattcctta gtcaatctag ccagcacgcc tagcgcgatt     240
accggtgcga ttgacaatct aagctcaagc gcgatcaatc tcactagcgc taccaccact     300
tctccggcct atcaagctgt ggctttagcg ctcaatgcgg ctgtgggcat gtggcaagtc     360
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gaataccagg ttctcaatac cgcttatcaa actatccaaa ccgctttaaa ccaaaaccaa     600
ggaggcggga tgcctgcctt gaatagctcc aaaaatatgg tagtcaatat caatcaaact     660
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ttgggcgtga aaatccccac cattaacacg gattattatt ctttcatggg ggctgaactc    2040
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<212> Type : DNA
<211> Length : 2091
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         SequenceDescription :

     Sequence
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     ttaaaccaat acaattactt aaattcctta gtcaatctag ccagcacgcc tagcgcgatt     240
     accggtgcga ttgacaatct aagctcaagc gcgatcaatc tcactagcgc taccaccact     300
     tctccggcct atcaagctgt ggctttagcg ctcaatgcgg ctgtgggcat gtggcaagtc     360
     atagcctttg gcatcagctg tggccctggc cccaatcttg gcccagaaca tttagaaaat     420
     gggggcgttc gatcgtttga caacacgcca aactacagct acaacaccgg tagcggaacg     480
     accaccacca cttgtaatgg agccagtaat gtagggccca atggtatcct atctagcagc     540
     gaataccagg ttctcaatac cgcttatcaa actatccaaa ccgctttaaa ccaaaaccaa     600
     ggaggcggga tgcctgcctt gaatagctcc aaaaatatgg tagtcaatat caatcaaact     660
     ttcacaaaaa accctaccac agaatacact taccccgatg ggaatggcaa ttattattca     720
     ggcggttcat caatcccaat ccagctaaag attagtagcg tcaatgacgc tgaaaacctt     780
     ttgcaacaag ccgctactat catcaatgtc cttaccaccc aaaacccgca tgtgaatggt     840
     ggcggtgggg catggggtt tggcggtaag accgggaatg tgatggatat ttttggcgat     900
     agttttaacg ctattaacga aatgatcaaa aacgctcaag ccgttttaga aaaaacccaa     960
     cagcttaacg ctaatgaaaa cacccaaatc acgcaaccag acaatttcaa cccctacact    1020
     tctaaagaca cgcagttcgc tcaagaaatg ctcaatagag ctaacgctca agcagagatt    1080
     ttgagcttag cccaacaagt agcggacaat ttccacagca ttcaagggcc tatccaacaa    1140
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     agcactttag ggaacgactc aaaagcgatc aatagcggta tctctaactt gcctaacgct    1380
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     ggcatcggcg tgcaagcggg ctataagcaa ttctttggca aaaaaaggaa ttgggggtta    1620
     aggtattatg gtttctttga ttataaccat gcttatatca aatctaattt ttttaactcg    1680
     gcttctgatg tgtggactta tggggtgggt atggacgcgc tttataactt catcaacgat    1740
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     gcgttagccg ggacttcgtg gcttaattcc caacaagtga atttgaccat gatgaatggc    1860
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     ttgggcgtga aaatccccac cattaacacg gattattatt ctttcatggg ggctgaactc    2040
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     <212> Type : DNA
     <211> Length : 2091
           SequenceName : SEQ ID 485
           SequenceDescription :

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     gactattctg ggcaggtcaa tttgggttat agcgggatta ccgcgcctaa gagttggcaa     180
     gatgaagaag tgaaaaaata cacaggaagc cgcacggtga tctctaacaa agcgctcacc     240
     caacaagcta accaaagcat tgaagaagct ttacagaatg tccccggtct gcaaattagg     300
     aatgccacag gtgtgggggc tatgcctact atccaaatcc gtggctttgg agcggggggt     360
     tcagggcata gcgatgcgac gctcatgtta gttaatggta ttcctgttta tatggcccct     420
     tacgctcaca ttgagctaga cattttccct gttacctttc aagccattga tcgcattgat     480
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     atcatcacta aacctatccc taatcaatgg gaaaaccaag cggctgaaag gatcacttat     600
     tgggctaagg ctagaaacgc tgggtttgcc gctccccctg ataaaaccgg cgatccttct     660
     ttcatcaagt ctttaggcaa caacctcctc tataacactt atgtgaggag cggagggatg     720
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     gacaatagcc cctctagtat ttcaaactat tggctggatg gggtctatga catcaatgaa     840
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<212> Type : DNA
<211> Length : 2526
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      SequenceDescription :

Sequence .
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ggcgaattga aaaaactttc agacacttat gagaatttga gcaacctttt aaccaatttt    180
aacaacctca atcaggcggt aacgaacgcg agcagccctt cagaaatcaa tgctgcgatc    240
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agacgcgttg gattaatcag ctctcaaacc aacaatggtg ccatgaatgg gatcggtgtg   1500
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gcgaatttcc aattcttgtt caatttaggc ttgagaatga acctcgctaa gaataagaaa    1860
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<212> Type : DNA
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Sequence
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gcgtttgata gtttaaaaga ggcgtttgat aaaattgacc cctatacttt atttcttcca     480
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aacacttgtc cttacaataa taatggtaat acaaaaaatg attgttggca aaatttcacc     660
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caatcttggg gcgatgcgat cttaaacgct ccttttgaat tcactaacag ctcaacagat     780
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gaaattgatg cggttgtttt aaaaaattca ggggttgtag ggttagccaa tggatatggc     960
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<212> Type : DNA
<211> Length : 2007
      SequenceName : SEQ ID 488
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
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tatttagggg ttgggtatca gcttagcgcg atcaacacgt cttttagcac cagttctata     180
gataaatcgt atttcatgac cggcaatggt tttggcgtgg tgttgggggg gaaatttgtg     240
gctaaaacgc aagctgtaga gcatgtgggt tttcgttacg ggttgtttta tgatcagacc     300
ttttcttctc acaaatccta tatttctacc tatggtttag aatttagcgg tttgtgggac     360
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acctttgggt tgaaattccc tgtcattcct aacaaaaaaa cggaaatcgt tgatggcttg     600
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<212> Type : DNA
<211> Length : 663
      SequenceName : SEQ ID 489
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gtgaaaaacg ccgacaaggt acaaaagctt tcagacgttt atgaacaatt aagcaagctt     180
ttagccaacg ataatggcac tagctcaaaa acaagcgcgc aagcgatcaa tcaagcggtt     240
aataatttga atgaaagcgc aaaaacttta gccggtggga caaccaattc ccctgcctat     300
caagccacgc ttttagcatt gagatcggcg ttagggttat ggaatagcat gggctatgcg     360
gtcgtatgcg gaggttatat taaaaaaccg ggcgaaaaca atcaaaaaaa tttccactac     420
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actcatagtc ctaatggcac aaatacatta aaagcagaca aaaatgtttc tctatctatt     540
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gggcttgctc ctttaaatag caaaggggaa aagttagaag cgcatgtaac cacatcaaag     660
gatcaacaag gaacatccag tgaccaaact acaaccacaa cttctgttat tgatacgact     720
aatgatgcgc aaaatctttt gactcaagcg caaacgattg tcaataccct taaagattat     780
tgccccatgt tgatagcgaa atctagtagt aatggtggaa ctaatggcgc aaacacccct     840
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aaatccagct tttttaactc gtcttctgac gttttgactt atggggtggg tagcgattta    1560
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tccgcgcaac atggcatgga attgggcgtg aaaatcccta ccattaacac gaattactat    1860
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<212> Type : DNA
<211> Length : 1932
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      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
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gaaatccaaa aagtctccaa cgcttacgaa aatttgaaca accttttaac ccgctataat     180
gaactcaaac aaacggcctc taacactgat tcaagcaccg ctcaagcgat tgacaatcta     240
gaaaagagcg ctagcagatt gaaaacgacc cctaataccg ccaatcaagc cgtgtcctca     300
gcgctcagct ctgcggtggg catgtggcaa gtgatagcct ctaatttagc caacaactcg     360
ctatcttcta gcgaatacga aaaactcaaa gcgacttctc aattgctcca aaataccctа     420
gaaaataaaa acaataatct taaaattgaa aatgactatg accagctttt aactcaagct     480
agtaccatta ttaataccct tcaaagccaa tgcccaggcg tagatggggg caatggcaaa     540
ccatggggca ttaatacaag cgggaacgca tgcgctattt ttggtagcac ctttaacgcc     600
attaatagca tgattgatag cgctaaaaaa gccgccgcag atgcccgaag aactgcccca     660
gaaagtccaa accaacaaaa cgcgtttacc aacgctgatt tcaataaaaa cctcaatcaa     720
gtctcaagcg ttatcaatga caccatctct tacctcaaag ggacaattt agaaaccatc      780
tacaacacca ttcaaaaaac gcctaattct aaagggtttc aaagtttggt gagccggtct     840
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tttggtcata accccttcag aagcgtggga ttaatcaact ctcaaagcaa taacggggcg     960
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gggatccggt attatggctt ttttgattac aactatgcgt atatcaaatc caattttttc    1080
aactccgctt ccaatgtttt cacctatggc gcgggcagtg atcttttatt gaacttcatc    1140
aatggcggat ccgatcgaaa ccgcaaagtc tcttttggca tttttggggg catcgctcta    1200
gcgggaacga catggcttaa taaccaatct gcgaatttaa aaatcaccaa tagcgcctac    1260
agcgctaaga tcaacaacac caatttccaa ttcttgttca ataccggttt aaggcttcaa    1320
gggatccatc atggcattga attaggcgtg aaaatcccta cgatcaacac caattactat    1380
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ttggcttatt ga                                                        1452
<212> Type : DNA
<211> Length : 1452
      SequenceName : SEQ ID 491
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
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aaaatcaata aagaaagagg catctaccct atgcagcaat tcgcaacgat tgcgggctat     180
ttagggcttg gttttagcct gttacccaaa aaggtttcag accatgttct aaaaggcaaa     240
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gtggcttaca acctctttgg ttattacgat gggtttatgg gggtctatac taatatctta     360
caaaccgata gccttgagac acagaacatg aaacacaaca aaaatgtccg caattatgtc     420
tttagcgacg cgtatttaga atacgcttat aagaattatt ttgaaataaa agccgggcgc     480
tatctctcca ctatgcctta taaaagcggt caaacgcaag gctttcaagt ttctgggcaa     540
tacaagcatg cgcgcttgac ttggtttagc tcatggggta gggcgtttgc ttatggttcg     600
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acctataaac ctcatcgttt cctcatagaa ggcttttatt acctttcgcc tcaaatcttt     780
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tccaatggaa gcccggtcta tagatacgac acgcctgcca ctcaaaacgg gcaaaacctc     960
attatccgcc aacgctttga catcaacaat tacaatgttt caatcgcttt ttataaagtc    1020
tttcaaaacg ctaatggttg gataggcaac atggggaatc caagcggtgt gatcatgggg    1080
agtaacagcg tctatgcagg ttttacaggc acagccctta aaagagacgc cgctaccatt    1140
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tactccaatt cagtggtctc ttgggaagca agagcgatga tctctttagg ctataaattc    1260
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<212> Type : DNA
<211> Length : 1416
      SequenceName : SEQ ID 492
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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ctattagaag gcgcgcaaac caaagaacaa gcaatagccc aaaacaccca aaacacccaa     180
aaaatttatg aaaacccccct aacccacccc caaactaaag aacaacctaa agaacaaaac   240
aaaagcgata cagccacccc acaaagcgtc tatgggagat actacatcct ccaaaacacc     300
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tatgagaata cagacccctt ttctagcggc aacaacgatc ctaatggccc tctcgcttct     780
cctaaacctc attatgaatg ccctggttat aaaaagagtt gtcaagtcgc ttcggtgtct     840
ttcaccccac aaaccgcaga agaattgacc aatttaatgt tagacatgat tgcggtgttt     900
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gactctaaat cttgggaaga agccgtttta aacgcccctt tccaattttc taacagccca      960
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cctaaagatg aaaaatacgc gctaacccca gaagaggtta tcaatagtta tagagtcgcc     1080
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gtgctgtttg atttcatcac cacttacacc aataaaaagc aagaccatcc aactaaaaag     1980
gtttttgctt cctcttttgg ggtgtttggg gggttaaggg gcttatacaa tagctactat     2040
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tacaagcatt ctaaatattc cataggcgtt agcgttcctt taatccaaag cggtattaag     2160
atcgcttcta ataatggtat ctatgcagac tctgttgttt tgaatgaagg gggtagccat     2220
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<212> Type : DNA
<211> Length : 2256
      SequenceName : SEQ ID 493
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
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gaagcgatgg gccaacaaac gagagtctta atgcaaatgc tctgccctga tccttctaaa      300
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gaatttggcc ttaaaatacc ggtgctttat cacacctatt accaatcaga aggcgttaca     2040
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<212> Type : DNA
<211> Length : 2094
SequenceName : SEQ ID 494
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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aatcaagtgg cttcgttgaa gcaaagcatt caaaacgcca acaacattga gctggtcaat 240
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cccctttaaaa aagtgggcat gatcagctct caaaacaata acggcgcttt gaacgggctt 1440
ggcgtgcaag tgggttataa acaattcttt ggcgaaagca aaagatgggg gttaaggtat 1500
tatggtttct ttgattacaa ccacggctat atcaaatcca gctttttaa ttcttcttct 1560
gatatatgga cttatggcgg tgggagcgat ttgttagtga attttatcaa cgatagcatc 1620
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gtcaatgctt ccaatttcca atttttgttc aatctcggct tgaggacgaa tctcgctaca 1800
gctaagaaaa aagacagcga acgttccgcg caacatggcg ttgaactggg cattaaaatc 1860
cctaccatta acaccaatta ttattctttt ctaggcacta agctagaata cagaaggctt 1920
tatagcgtgt atctcaatta tgtgtttgct tattaa 1956
<212> Type : DNA
<211> Length : 1956
SequenceName : SEQ ID 495
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gaagcctttc aaaaacacca aaaagacggc tttttcatag aagccggctt tgaaaccggg 120
ctattacaag gcacacaaac ccaagaacaa accatagcca ccactcaaga aaaacccaaa 180
cccaaaccca aaccaaaacc cattacccct caaagcacct atgggaaata ctacatctcc 240
caaagcacca ttttaaagaa tgcgactgag ttgtttgcag aggataatat caccaactta 300
accttttact ctcaaaaccc tgtgtatgta accgcttata accaagaaag cgctgaagaa 360
gctggctatg gtaataacag cttgattatg atacaaaact tcttgcctta taacttgaac 420
aacattgagc tgagttacac ggacgatcaa ggcaatgtgg tcagtttggg cgtgatagag 480
actatcccta aacaatctca aatcattctg cccgcaagct tgtttaacga cccacagctt 540
aacgccgatg gcttccaaca actccaaacc aacaccacac gattttctga tgccagcacg 600
cagaatctgt ttaacaagct cagcaaggtt acaaccaatc ttcaaatgac ttatatcaat 660
tacaaccaat tttctagcgg taacggcagt ggctctaaac cccccatgccc cccatacgaa 720
aaccaagcaa attgtgtggc taaagtgccg cctttcacct ctcaagacgc taaaaatttg 780
accaatttaa tgctgaacat gatggcggtg tttgattcta aatcttggga agacgccgtc 840
ttaaacgctc ctttccaatt cagcgacaac aacctgtcag cgccatgtta ttctgattac 900

```
cttacatgcg tgaatcctta caacgatggg cttgttgatc ctaaattgat cgccaaaaat      960
aaaggagatg aatacaatat agaaaacggg caaacaggct cagtgatatt aacgccgcaa     1020
gatgttatct atagctatag agtcgctaat aatatttatg tgaatctctt gcccacaaga     1080
ggaggggatt tagggttagg gtctcaatat ggtggcccga atggcccagg cgatgatggc     1140
accaatttg gcgctttagg gatattgtcc cctttcttag accctgaaat attgtttggc     1200
aaagaattga ataaagtcgc catcatgcaa ttaagagaca tcatccatga atacggccat     1260
actttaggct atacgcataa cgggaacatg acttatcaaa gagtgcgcat gtgcgaagaa     1320
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gattgctctc aagtccccgc tgggcttata ggcgttacca gcgctgtttg gcaacaactc     1560
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ggagcccccc tattaggcgt taatcttaaa atgggctatc aaaaatattt taatgattat     1800
ctagggttgt cttcttatgg cattatcaaa tacaactacg ctcaagccaa caacgaaaaa     1860
atccagcaat taagctatgg cgtgggaatg gatgtgctgt ttgatttcat caccaattac     1920
actaacgaaa agaaccccaa aagcaatcta accaagaaag ttttcacttc ctctcttggg     1980
gtgtttgggg ggttaagggg cttatacaac agctattatt tgttgaacca atacaaaggg     2040
agcggtaatt taaatgtgac cggtgggttg aattaccgct acaagcattc caaatattct     2100
ataggcatta gcgttccttt ggtccagttg aaatctagga tcgtttctag cgatggtgct     2160
tataccaatt ctatcaccct caatgaaggg ggcagtcatt ttaaagtgtt ttttaattac     2220
gggtggattt tctaa                                                      2235
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<212> Type : DNA
<211> Length : 2235
SequenceName : SEQ ID 496
SequenceDescription :

Sequence

<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :

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ggcttttca tagaagccgg ctttgaaact gggctattag aaggcacaca aacgcaagaa       120
aaaagacaca ccaccacaaa aaacacttac gcaacttaca attatttacc cacagacacg      180
atttaaaaa gagcggctaa tttattcacc aatgccgaag cgatttcaaa attaaaattc       240
tcatctttat cccctgttag agtgttgtat atgtataatg gtcaattaac tatagaaaac      300
ttcttgcctt ataatttaaa taatgttaag cttagtttta cagacgctca aggcaatgtg      360
atcgatctag gcgtgataga gactatcccc aaacactcta agattgtttt gcccggagag      420
gcatttgata gtctaaaaat tgacccctat actttatttc ttccaaaaat tgaagccact      480
agcacttcta tttctgacgc taacacgcag agggtgtttg aaacgctcaa taagattaag      540
acaaatttgg tcgtaaatta taggaatgaa aacaaattta aagatcacga aaatcattgg      600
gaagccttta ccccacaaac cgcagaagaa ttcactaatt taatgttgaa catgatcgct      660
gttttagact cccaatcttg gggcgatgcg atcttaaacg ctccttttga gttcactaac      720
agcccaacag attgcgataa tgatccttca aaatgcgtaa atcctgggac aaacgggctt      780
gtcaattcta aagtcgatca aaaatatgtg ttaaacaaac aagacattgt caataaattt      840
aaaaacaaag cggatcttga tgtaattgtt ttaaaggatt caggggttgt agggcttggg      900
agtgatatta cccctagcaa caatgatgat ggcaagcatt atggccagtt aggggtagta      960
gcttctgctt tagatcctaa aaaactcttt ggcgataacc ttaagactat caatttagag     1020
gatttaagaa ccatcttgca tgaattcagc cacactaaag gctatgggca taacgggaat     1080
atgacctatc aaagagtgcc ggtaacgaaa gatggtcaag tggaaaagga tagtaatggc     1140
aagccaaaag attctgatgg cctcccctat aatgtgtgtt cgctttatgg gggatccaat     1200
cagcccgctt tccctagcaa ctaccctaat tccatctatc acaattgtgc ggatgtcccg     1260
gctggctttt taggggtaac agcagcggtt tggcagcagc tcatcaatca aaacgccttg     1320
ccgatcaact acgctaactt ggggagtcaa acaaactaca acctaaacgc tagtttaaac     1380
acgcaagatt tagccaattc catgctcagc accatccaaa aaacctttgt aacttctagc     1440
gttaccaacc accatttttc aaacgcatcg caaagtttta gaagccctat tttaggggtt     1500
aacgctaaaa taggctatca aaactacttt aatgatttca tagggttggc ttattatggc     1560
atcatcaaat acaattacgc taaagctgtt aatcaaaaag tccagcaatt gagctatggt     1620
gggggggatag atttgttatt ggatttcatc accacttact ccaataaaaa tagccctaca     1680
ggcattcaaa ccaaaaggaa tttttcttca tcttttggta tctttggggg gttaaggggc     1740
ttgtataaca gctattatgt gttgaacaaa gtcaaaggaa gcggcaattt agatgtggct     1800
accgggttga actaccgcta taagcattct aaatattctg tagggattag catcccttta     1860
atccaaagaa aagctagcgt cgtttctagc ggtggcgatt atacgaactc ttttgttttc     1920
aatgaagggg ctagccactt taaggtgttt ttcaattacg ggtgggtgtt ttag           1974
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<212> Type : DNA

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<211> Length : 1974
      SequenceName  : SEQ ID 497
      SequenceDescription :

Sequence
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<213> OrganismName  : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gtcagaggat atttgatttg tcttgtttgt aacacaccta aaatgataca aagaggattg     120
aatggtgtct cattttatgg ttgctctgat tatgtaaata aaggcgactg taagggcgtt     180
ttacgagaaa taaatggctc aatgaaaatg gtctgcttac attgtgaaaa cacgcccata     240
atggaaaaag tagaaagtgg taggggagga gcttacgctt gtaagaattg caataggaag     300
ttttacttta tcgatcttgc aaaacaaaac gaacgaaaaa aagatttaga aaaagaaaaa     360
aaagaattgc ttaataagat tgaaaagcaa aaaatcaaac accttgagcg tttcattttg     420
gctggtgtaa aagctaatat taaagaaaat tctttttctt taggatgtaa aaattatcct     480
aagtgcgaat ggactgctag tatggattca caagatctta aatgtcccaa atgcaacaga     540
ttaatgaaaa gaaaaaagaa tttcaaaaac aatgagtttt ttacagctac atcgcttacc     600
ttaaatgcaa tagaattttg tctctatatt aatttgaaaa aaaaggaaac caatgtttag     660

<212> Type : DNA
<211> Length : 660
      SequenceName  : SEQ ID 498
      SequenceDescription :

Sequence
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<213> OrganismName  : Helicobacter pylori, strain J99
<400> PreSequenceString :
ttggaaatta agaaatattt tctttacgct ctattttttt tgctttttttc tggtcttttt      60
ttatccaaac ttcaagctta taaattcaac atgagtattg ttggaaaggt gagcagctat     120
actaagtttg gctttaacaa ccaaagatac cagccttcta aagacattta tcctacaggt     180
agttatactt ctttactcgg cgaattgaat ttgagcatgg gattatacaa gggcttgagg     240
gcagaagtag gggctatgat ggcagcgctt ccctatgact ctaccgccta tcaaggcaat     300
aatatcccta atggccagcc cggatctagg acggatcctt ttggggcggg tatcttttgg     360
caatacattg gctggtatgc aggacatagc ggtttaaacg tgcaaaaacc tcgtttggct     420
atggtgcata acgctttttt gagctacaac tacaagaaag acaaattcag ttttggcgtg     480
aaagggggc gctatgatgc tgaagagtat gattggttca cttcttacac tcaaggggtt     540
gaaggctttg tcaaatacaa agacaccagg ttaagggtga tgtattcaga cgctagggct     600
tcagcgtcaa gcgactggtt ttggtatttt gggcgttact atacaagcgg taaggctcta     660
atgattgcgg atttgaaata cgaaaaagac aacctaaaaa tcaaccctta tttttatgcg     720
atctttcaaa gaatgtatgc gccaggcatt aatatcactt acgacaccaa ccctaatttc     780
aacaataagg gctttcgttt tgtaggcact ttcgtggggt ttttccccat ttttgccact     840
ccggctaatc aaaatgatat tatcctattc caacaagtgc cattaggaaa gagcgggcaa     900
acttatttct tccgcactcg tttttactat aacaagtggc aatttggggg tagcgtctat     960
aaaaatatcg gtaacgctaa tggcgatata ggtatttatg gcgaccctct agggtataac    1020
atttggacga atagtattta tgacgcagaa attaacaata tcgttggcgc tgatgttatt    1080
aacgggtttt tatatgtagg ctcgcagtat agggggttta gttggaaaat tttaggccgt    1140
tggacggata gcccaagggc tgatgaaagg agtctcgcgc tctttttgag ttatttttct    1200
aataagtata atattagaat ggatttgaaa ctagaatatt atggcaatat caccaaaaaa    1260
ggctattgta ttgggtattg tggcatgtat gttccagttg atcctaatgg gcctggcacg    1320
caacctttaa cacacaacgt gtattctgac aggagccata tcatgtttaa cattacttat    1380
ggttttagga tttactag                                                  1398
<212> Type : DNA
<211> Length : 1398
      SequenceName  : SEQ ID 499
      SequenceDescription :

Sequence
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<213> OrganismName  : Helicobacter pylori, strain J99
<400> PreSequenceString :
atgaaaaaga caattctact ctctctctct ctctctctcg cttcatcgct cttgcatgct      60
gaagacaacg gctttttttgt gagcgcgggc tatcaaatcg gcgaagcggt gcaaatggtc     120
aaaaacaccg gcgaattgaa aaacttgaac gacaaatacg agcagttaag ccaatcttta     180
gcccaactgg cttcgttaaa aaaaagcatt caaacggcga acaacattca ggctgtcaac     240
aatgctttaa gcgatttaaa aagctttgcg agtaacaacc acacaaacaa agaaacatcg     300
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cccatctaca acaccgcgca agctgttatc acttcagtat tggctttttg gagtctttat     360
gcagggaacg ctctcagttt tcatgtgacc ggtttgaatg atggatctaa ttctccttta     420
ggaagaatcc atagagatgg gaactgcaca ggattacaac aatgttttat gagcaaagaa     480
acttatgata aaatgaagac acttgccgaa aacctccaaa aagctcaagg caatctctgt     540
gccttatcag aatgctctag caatcaatca aatggaggca aaacttccat gactacagct     600
cttcaaaccg cgcaacagct catggactta atcgaacaga ccaaggtttc tatggtgtgg     660
aaaaatatcg tcatcgcagg tgttacaaac aaacccaatg gtgctggcgc tatcacatcc     720
actggtcatg taaccgacta tgcggtgttt aacaacatca aggcgatgct acctatcttg     780
caacaagcgc ttacgctttc tcaaagtaac cacaccctat ccactcagtt gcaagctcga     840
gctatgggat ctcaaacaaa tcgtgaattc gctaaagaca tctacgcttt agctcaaaac     900
caaaagcaaa tcctttctaa cgcttcaagt atcttcaatc tctttaattc cattcctaaa     960
gaccaactta agtatttgga gaacgcttac ttgaaagtgc cacatttggg taaaacccct    1020
actaaccctt acagacagaa tgtgaatttg aataaagaaa ttaatgcggt tcaagacaat    1080
gtagctaatt atggtaatcg tttggattcg gctttaagcg tggctaaaga tgtttataac    1140
ctaaaatcca atcaaacaga gatcgtaacc acttataacg atgctaagaa tttgagcgaa    1200
gagatttcta aacttcccta taaccaagtc aatgtaacaa acatcgttat gtcgcctaaa    1260
gattctacag cgggccaata ccaaatcaac ccagagcagc aatccaatct taaccaagct    1320
ttagcggcga tgagcaataa ccccctttaaa aaagtgggca tgatcagctc tcaaaacaat    1380
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agctttttta attcttcttc tgatatatgg acttatggcg gtgggagcga tttgttagtg    1560
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ggtatccaac tagcagggac tacatggctt aattctcaat acatgaattt aacagcgttc    1680
aataaccctt acagcgcgaa agtcaatgct tccaatttcc aatttttgtt caatctcggc    1740
ttgaggacga atctcgctac agctaagaaa aaagacagcg aacgttccgc gcaacatggc    1800
gttgaactgg gcattaaaat ccctaccatt aacaccaatt attattcttt tctaggcact    1860
aagctagaat accgaaggct ttatagcgtg tatctcaatt atgtgtttgc ttattaa       1917

<212> Type : DNA
<211> Length : 1917
      SequenceName : SEQ ID 500
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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ttgttcacta cgggttcatt aggggcggtt acttatgaag tgcatgggga ttttatcaac     120
ttctccaaag tgggttttaa ccgttcgcct attaaccctg ttaaaggtat ctatcctaca     180
gaaacttttg ttaaccttac gggtaagcta gaggggtctg tgcatttagg taggggatgg     240
accgtgaatg taggcggtgt tttgggcgga caagtttatg ataacactag gtatgatagg     300
tgggcaaagg attttacccc cccaagctat tgggataaaa cttcttgcgg cactgattct     360
ttgagccttt gtatgaatgc gactaaaatg tggcaacagc aagggccagg tggtatcatt     420
gaccctaggg gtattggcta tatgtatatg ggtgagtgga acggcttgtt ccctaattac     480
tatccggcta acgcctactt gcccgggcat tcaaggcgct atgaagttta taaagcgaat     540
cttacctatg acagcgacag agtccatatg gtaatggggc gctttgatgt taccgagcag     600
gagcaaatgg attggattta ccaattgttc caaggttttt atgggacttt caagcttact     660
aagaacatga aattcttgct ctttagctct tggggtcgtg gtatcgctga tggtcaatgg     720
ttgttcccta tctatcgtga aaagccttgg ggtattcata aggcgggtat tatttatcgc     780
cctacaaaga atctaatgat ccacccttat gtgtatctca tcccaatggt aggtacattg     840
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aaaacgactt tctatgtgtt gtatgactat cgttggaata acgctgaata cggccgttac     960
gcacccgctc gttataacac ttgggatccg ttcttggata atggtaagtg gcgtggcttg    1020
caaggtcctg gtggtgcgac gctctatttg caccaccaca tagacattaa caactacttt    1080
gtggttggtg gtgcttacct caacatcggt aaccctaaca tgaacttagg tacttggggt    1140
aaccctgtgg ctcttgatgg tatcgaacaa tgggtcggtg gcatctacag cttaggcttt    1200
gcggggattg acaacattac cgatgctgat gcgttcactg agtatgttaa aggtggaggt    1260
aagcatggta agttcagttg gagcgtttat cagcgcttca ctaccgcacc aagggctttg    1320
gaatatggta ttggtatgta tctagactat cagttcagca agcatgttaa agcgggtctc    1380
aaactcgtgt ggttagagtt ccaaatccgt gcgggttaca accctggaac cggtttcctt    1440
gggccaaacg gtcagccgct caacttgaat aatggtttgt ttgaatcttc ggcgttcgcg    1500
caaggccctc aaaacatggg tggtatcgca aaaagcatta ctcaagacag aagccatttg    1560
atgacacaca tcagttatag tttctaa                                        1587
<212> Type : DNA
<211> Length : 1587
      SequenceName : SEQ ID 501
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          SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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ggcacggctt taggctcggc gtatgtcgct ggggctaggg gtgctgacgc ttctttttac     180
aaccccggcta acatgggctt tactaacgat tggggcgaaa acagaagcga atttgaaatg    240
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ttatattcgg taacaagttt agaaattgat aaaagccaac aaaatatttt aggcatcatc     360
aacactatag ggttaggcaa tatccttaaa gcgcttggca atacggccgc taccaatggc     420
ttatcacaag ctatcaatcg tgttcaaggg cttatgaact taaccaatca aaaagtcgta     480
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gttttaccta aattctttta taaaacgcgc acgcataacg gcttcacttt tggggggagt     600
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agagtgggtt cgagtttgcg tgtgtttgat catggcatgt tttctgtggt gtataattct    1140
tcagttacct ttaacatgaa aggcggtttg gtggctatca cagagcttgg cccttcttta    1200
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aagggcttga gcgggacggt ggcttccttg gactctgaaa cgcttaaaaa aatggtaggc    1440
ctagcgaatt ttaaaagcgt gatgaacatg gggctggct ggagggacac caacaccttt     1500
agattagggg taacttacat gggtaaaagc ttgcgtttaa tgggcgctat tgattatgat    1560
caagccccaa gcccccaaga cgcgataggc attccggact ctaatggcta taccgtggct    1620
tttgggacta aatacaattt taggggcttt gatttgggcg tagcggggag tttcactttt    1680
aagagcaacc gctccagttt gtatcaatcc ccaactattg ggcaattgag aatctttagc    1740
gcctctttag gctatcgctg gtaa                                           1764
<212> Type : DNA
<211> Length : 1764
          SequenceName : SEQ ID 502
          SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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actcaaaacg cacttaaaac ttcattggag cgattgagtt caggtttaag gatcaataaa     120
gcggctgatg acgcatcagg catgacggtg gcggattctt tgcgttcgca agcgagcagt     180
ttgggtcaag cgattgccaa cacgaatgac ggcatgggga ttatccaggt tgcggataag     240
gctatggatg agcaattaaa aatcttagac accgttaagg ttaaagcgac tcaagcggct     300
caagatgggc aaactacgga atctcgtaaa gcgattcaat ctgacatcgt tcgtttgatt     360
caaggtttgg ataatatcgg taacacaacg acttataacg ggcaagcgtt attgtctggt     420
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<212> Type : DNA
<211> Length : 1533
      SequenceName : SEQ ID 503
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
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atgacagcag cgattattcc tattgttgtg ggatttacta atccgcaaat gaccgctatc     180
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caacaataca accaattgta tcaaggtttt aacgatcaaa gcatggctgt ggggaacaat     300
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caaattagtg ctgtcaatag tcagattgca agcattttag cgagtaacac taccccctaaa    420
aatcctagcg ctattgaagc ttatgcgacg aatcaaatcg ctgttcctag cgtgccaaca     480
acggttgaaa tgatgagcgg tatattaggc aatattacaa gcgcagcacc aaaatacgcc     540
ctagctctac aagagcaact gcgttctcaa gcaagcaaca gctcaatgaa tgatacagcc     600
gattcccttg atagctgtac cgctttaggc gcacttgttg gctcatcaaa agtgtttttc     660
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<212> Type : DNA
<211> Length : 1113
      SequenceName : SEQ ID 504
      SequenceDescription :

Sequence
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cctaatcaaa aaccaatcgt tgataagaat gatagggata ataggcaagc ttttgagaaa     180
atctcgcagc taagggagga attcgctaat aaagcgatca aaaatcctac caaaaagaat     240
cagtattttt caagctttat cagtaagagc aatgatttaa tcgacaaaga caatctcatt     300
gatacaggtt cttccataaa gagctttcag aaatttggga ctcagcgtta ccaaattttt     360
atgaattggg tgtcccatca aaacgatccg tctaaaatca acacccaaaa aatccgaggt     420
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<212> Type : DNA
<211> Length : 3504
      SequenceName : SEQ ID 505
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
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aaattgaatt accatccagc tagcgagaaa gttcaagcgt tagatgaaaa gattttactt    180
ttaaggccag ctttccaata cagcgataat attgctaaag agtatgaaaa caaattcaag    240
aatcaaacca cgcttaaagt tgaagagatc ttgcaaaatc agggctataa ggttattaat    300
gtggatagca gcgataaaga cgattttct tttgcgcaaa aaaaagaagg gtatttggct    360
gtcgctatga atggcgaaat tgttttacgc cccgatccta aaaggaccat acagaaaaaa    420
tcagaacccg ggttattatt ctccactggt ttggataaaa tggaaggggt tttaatcccg    480
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acgatggatt tgagcgagtt ggacatccaa gaaaaattct taaaaaccac ccattcaagc    600
catagcggag ggttagttag cactatggtt aaggggacgg ataattctaa tgacgcaatt    660
aagagcgctt tgaataagat ttttgcaagt atcatgcaag aaatggataa gaaactcact    720
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<212> Type : DNA
<211> Length : 783
      SequenceName : SEQ ID 506
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
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cccttttacga caccgctcaa tggggggctg gatgtcgtgc gcgccgccca tttacacccc      180
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<212> Type : DNA
<211> Length : 3657
SequenceName : SEQ ID 507
SequenceDescription :

Sequence

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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 4884
      SequenceName : SEQ ID 508
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 3903
      SequenceName : SEQ ID 509
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
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aaagcacgtt cgaaccagtt cttcaacggg gaacagggta gtttacaaaa cgctttagcc     180
actgctttaa aagatccaga ggccaacaaa cagtttgtcg ctgctcccct tttaaaggca     240
ttgacagctt ggtatgaaaa taaccaagac aaacaggtca cccagttctt taaagacacc     300
aaaaagagtg ttgatgagca atacaaccaa gccgtagata aggtggtatc ggctagccga     360
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aaaagcccag aagttgtttg aacagctcat taa                                  453
<212> Type : DNA
<211> Length : 453
      SequenceName : SEQ ID 510
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
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aaattcttaa agttccgtgc ttttcaagcc aaaattggca cattttataa cactaacttt     240
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gaacgagtac ggagcttaaa ccaaaatgtt aaccaagcca atcctacccc ttggttaaat     540
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tactttacct ttttaattac caaagttttg tgacctaagg tgggcactga ggatactaat     660
gtcagtgaag aaaaaagcaa actcaaaact aaaactgaag atgttaacaa gattagggaa     720
aagattttga acaacatcga cagtaagctc aaaacttttg tccaaaaact caaacctacc     780
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<212> Type : DNA
<211> Length : 2181
      SequenceName : SEQ ID 511
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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aaaccaactt ccaaccaatt ttttaacggt gagcatggta ccattcaaag cgctttaaac    180
accgctttaa gagatccgga aactaacaaa aaatttgtag ctgctccact tttaaaagca    240
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aagactaatg ttgataacca atacaaaacc gttgtagata aagtagtttc agcaccacgc    360
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aagaattatt tgtcttataa ggaaaatggc aaagtatcag ccggtccgtt tttatacgac    540
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actaatgatg attttttcgc gaagattcaa agcgaagttt ttgatcaatg ggctgagtac    660
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<212> Type : DNA
<211> Length : 714
      SequenceName : SEQ ID 512
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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atcttagaag acattcaaaa gaaggttcaa gaatttgtta aaaacaagct taaaccaacc    360
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agcaataccт cgagtagtga aggagctgat gccttgagta aagtaattgg caactattac    660
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<212> Type : DNA
<211> Length : 1719
SequenceName : SEQ ID 513
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :

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<212> Type : DNA
<211> Length : 2337
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      SequenceDescription :

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<212> Type : DNA
<211> Length : 3240
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<212> Type : DNA
<211> Length : 4617
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      SequenceDescription :

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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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gggctgctgt tgtccagcgg cggggccggc gggttcggcg ggttcggcac cgccggtggg     2160
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ggcagcgccg ggctgatcgg caccggcggc aacggcggca acggcggcac cggcgccaac     2280
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<212> Type : DNA
<211> Length : 2352
      SequenceName : SEQ ID 541
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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gctgcggctg ccgatgaagt gtcggcggcg attgcggggt tgttcggggc ccatgctcgg      180
cagtatcagg cgctcagcgt acaggtggca gcgtttcacg agcagtttgt gcaggcgttg      240
actgcggccg cgggtcggta tgccagcact gaggccgctg ttgagcggag tctgctgggt      300
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gggacggcac ccgggcagcc tggcgcggcc ggcgggttgc tgtttggcaa cggtggcaac      420
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gccagcaccg gggacagccc ggcagatgtg tccggcatcg gtgatcaaac cggcggcgac      780
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aacggtggcg ccggtggcgc gggtggtatc ggtggtgacg gcgccacggg ggggcccggg     1260
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gctggcggtg acggcggcaa cggcggctcc ggtggcaacg ccagtacttt tggcgatgag   1800
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ggcgcgggcg gtagcggcgg tgaggcaggc gcggggggcc tcaccaacgg ccccgggtcc   2040
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<212> Type : DNA
<211> Length : 2085
SequenceName : SEQ ID 542
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :

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gccgcgggtg ccgatgaagt ctcgacggcg gttgcggcgc tgttcggcgc ccacggccag    180
gcctatcagg cgctcagcgc ccaagcgcag gcgtttcatg cccagttcgt gcaggcgttg    240
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ccgatcaacg agttcttcct ggcgaatacc gggcgcccgc tgatcggcaa cggcaccaac    360
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gggctcatcg gcaacggcgg cgccggcggc gccggcggga gggccagcac ggggaccggc    540
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gcgggcggcg ccggcggaaa ggcgggtctg ctcatcgggg cgggcggtgc cggcggcgcc   1140
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gtgctgatcg gcaacggcgg caacggcggc aacggcggga aagccggcgg cacacccggc   2460
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<212> Type : DNA
<211> Length : 2514
SequenceName : SEQ ID 543
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :

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gccgccggtg ccgatgagat ctcggcggca atcgctgcgt tgttcggcgc gcacggccgg    180
gcctatcagg cggcgagcgc cgaggcggcg gcgtttcatg gtcggttcgt gcaggcgctg    240
accaccgggg ggggcgccta tgcggccgcc gaggccgccg ccgtgacgcc gctgctcaac    300
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gctcccgaga gcacctcgcc atggcacaac ctgcagcagg acattctcag tttcatcaac   1560
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ggtggcgccg gcggatccgc cttcttgatc ggttccggcg gtaccggtgg tgtcggcggg   1860
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gccggcggga ctggcggcgc tgccgggttg ttcgccaacg ggggggccgg cggcgccggc   2040
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cacgggggaa ccggcggacc aggtgggaac ggcggctcca cgggggccgg agggacaggc   2160
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tacagcctca atggcactgg cggtgatggc ggcaccggtg gggccggcca aatcaccggc   2460
cttcgcagcg gcttcggcgg cgccggcggc gccggcggcg ccagcgatac cggcgccggc   2520
gggaacggcg gcgccggcgg caaggccggg ctgtacggca acggcggtga cggtggcgcc   2580
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<212> Type : DNA
<211> Length : 2745
      SequenceName : SEQ ID 544
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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gccgcgggcg ccgatgaggt gtcggcggcg atcgcgacgc tgtttggcag ccatgctcgg    180
gagtatcagg cgatcagcac gcaggtggca gcgtttcatg accgatttgc gcagacgtta    240
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<212> Type : DNA
<211> Length : 2226
      SequenceName : SEQ ID 545
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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gtcattgcca acggctcctt tgccccgtcg ttcgtcggct tcggcggcaa cggcggcaac     1560
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<212> Type : DNA
<211> Length : 1632
      SequenceName : SEQ ID 546
      SequenceDescription :
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Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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agcgccggcc aacccggcta a                                             1821
<212> Type : DNA
<211> Length : 1821
      SequenceName : SEQ ID 547
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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gccgccggtg ccgatgaggt gtccgccgcc gtggcggcgc tgtttagcgg ccacgcgcag    180
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acgagcacgg caggcgcgta tgccagcgcc gaggccgcca acgtcgagca gcagctgctg    300
ggtgcgatca acgcgccgac catggcgctg ctggggcgcc cgctgatcgg ccacggcgcc    360
gacggggcgc cggggaccgg gcaggccggc ggggccggcg ggatcctgta cggcaacggc    420
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gccggcgggg ccggtggcaa cggcggacaa ctctacggca ccggcggcac cggcggcacc     1380
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ggcggcaccg ccggcgagga cggtaccggc ggcaacggcg ggaccggcgg aaacggtggg     1560
gccgccgtcc taatcggcaa cggcgggggc ggcggcgccg gcggaaacgg tggggccggc     1620
aacgatggca cccccggcaa cggcgggggc ggcggcgtcg gcgggaccgg gggaaccctg     1680
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<212> Type : DNA
<211> Length : 1731
      SequenceName : SEQ ID 548
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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ttactgcctg cgggcgctga cgacgtgtcg gctgcgattg cggcgctgtt cgcaacgcac      180
gggcaggcat accaggagct cagtgcccac gcggtcgcat tccatgagca gttcgtccag      240
ctcatgagcg cgggggcggc ccagtacgcc agcgccgagg cagccaactc gtcaccattg      300
caaatcgtgg gccaaaccgc cctcgatgcc atcaattcac ccgtgcagac gctgaccggg      360
cgtccgctta tcggcaacgg tgccaacggg gtcgcaggaa ccgggcaaaa cggtggcgat      420
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tttggcggct ctgctggcgg tggcggctgg gtaggtgccg ttaacttcgg accgattagt     1260
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gccggcagcc tcagcattca atttggtgca tcagggggtg acggcggcca aggtggggtg     1380
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gacggtggcg cgggcggcag cggaggccta ctgttcggta gcggcggggc cggcggcatc     1620
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aacgccgccc tgctgatcgg taccggtggc gacggcggag atggtgtccc acccgcaccc     1860
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<212> Type : DNA
<211> Length : 1920
      SequenceName : SEQ ID 549
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
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atcgggtcgg cgattagctc ggctaatgcg gcggcggccg tcaacacgac gggattgttg      120
accgcgggtg ccgatgaggt gtcgacagcg attgcggcgt tgttcggtgc ccaaggccag      180
gcctaccagg cggcgagcgc acaggcggcg gcgttttacg cccagttcgt gcaggccctg      240
agcgccggcg gaggcgcgta tgcggccgcc gaggccgccg ccgtgtcgcc gctgctggcc      300
ccgatcaacg cgcaattcgt ggcggccacc gggcgcccgc tgatcggcaa cggcgccaac      360
ggcgcccccg ggaccggagc caacggcggg cccggcgggt ggttgatcgg caacggcggc      420
gccggcgggt ctggcgcccc cggcgctggg gccggcggta acggcggggc cggcgggctg      480
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ttcggcagcg gcggggccgg cggggcctcc accgacgtcg ccggcggggc cggtggggcc      540
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ggcaacggcg gcaacggcgg taacagcggt aacgccggga aatccggggg tgcacccggc     2340
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atgtag                                                                2406
<212> Type : DNA
<211> Length : 2406
      SequenceName : SEQ ID 550
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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ctgctgaacg cggtgaacgc gcccacccag acgctgctgg ggcgtccgct ggtcggcgac      180
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ggcaacggcg gcaacggtgg cgacagcacg agccccgggg ttgccggggg agccggcggg      300
tcagcggggc tgatcggcaa cggcggcagg ggcggcaacg gtgcgcccgg cggtgcagga      360
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accggtgaca acggtgtggg agacctcggt gctggcggcg gggaggcga tggcggtttg       480
ggtggacggg cggggctgat cggtcacggc ggtgccggcg gaaacggtgg ggacggtggg      540
cacggcggga gcggcaaggc cggcggcagt ggcggcagtg gcggcttcgg ccagttcggt      600
ggcgccggcg ggctgctgta cggcaatgga ggggcggccg gttccggcgg caacggtggc      660
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<212> Type : DNA
<211> Length : 1305
      SequenceName : SEQ ID 551
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          SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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aacatcggca acggaaacaa aggcagctcc aacctcggcg gcggcaacat cggcaataac     660
aacatcggca gcggcaaccg aggcagcgac aacttcggcg ccggcaacgt cggcaccgga     720
aacatcggct tcggcaacca gggccccata gacgttaacc tcttggcgac gccgggccag     780
aacaacgtgg gcctgggcaa catcggcaac aacaacatgg gcttcggcaa caccggcgac     840
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aacaacttcg gcttcggcaa caccggcaac aacaacatcg gaatcgggct caccggcaac     960
aatcagatgg gcatcaacct ggccgggctg ctgaactccg gcagcggcaa tatcggcatc    1020
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accctctttg gctccgtccg gagcggcttg aacacgggcc tgtttaacat gggcaccgcc    1620
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<212> Type : DNA
<211> Length : 1659
      SequenceName : SEQ ID 552
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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gcggcgggga ccgacgaggt gtccaccgcc atctcagcgc tgttcggcgc tcatgcccag     180
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ggactgatcg gcaacggcgg taacggcggc aacgccgaga ttgtcatctc cggcggtagc    1020
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<212> Type : DNA
<211> Length : 1086
      SequenceName : SEQ ID 553
      SequenceDescription :
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Sequence
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<213> OrganismName : Rickettsia prowazekii strain Madrid E
<400> PreSequenceString :
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ttcactaact ctaatgcaac aggaacaatt attcctaata atggtagcgt aagcttgaat    120
actgacgcag gtcttgtagg aggagtattt aacaatggcg atattatcca aatagttaat    180
ggagggcgtg aaattaaaat atcggcagat aaagcaaatg ctatcattgg aggaatcaat    240
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<212> Type : DNA
<211> Length : 2823
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      SequenceDescription :

Sequence
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acccctaagg gaatggcaca agtgccgacc tatacagaag ggttaatct ttctgaaaaa      240
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aatattctga acaagaaagg tacatttgcc ggctttgaag acacatacaa gcgcatgttc      660
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<212> Type : DNA
<211> Length : 5121
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          SequenceName : SEQ ID 559
          SequenceDescription :

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    <213> OrganismName : Porphyromonas gingivalis W83
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    ctaagtgaag ccgatgtgga gtgtacaatc aaaatagaag ccgaggatgg ctatgccaac     180
    gacatttggg cagacctcaa cggaaacggc aagtacgatt cgggggagag gctcgattca     240
    ggtgagtttc gtgatgttga gttcagacaa acaaaggcca tcgtctatgg caaaatggcc     300
    aaattcttgt ttagaggttc ttctgcaggg gactatggtg ctacctttat agatattagc     360
    aattgtaccg gcctgactgc tttcgactgc tttgccaatc tgctgacaga actcgatctg     420
    tccaaagcaa acggtctgac ttttgtaaac tgcggcaaaa accagctgac caagcttgac     480
    ctgcccgcaa atgcggacat tgagacgctg aactgctcca aaaacaagat aacgagtctc     540
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    ttggatctct ccgccaatac gctcctcgaa gagctggtgt attctaacaa cgaggtgact     660
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    accggactcg atgtcgcagc caacaaagag ctgaaaatac tccactgcaa caacaatcag     780
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    actgaaggag aaggcaggtt cgttccttac aacgacgatg aaggaggaga agaggagaac    1140
    gtgtgtacaa ccgaacacgt ggaaatggcc aaggccaaga attggaaggt acttacctcg    1200
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    tccgtatatg ctcaagatgg catcctctac ctctccggta tggagcaggg cttgcccgtt    1320
    caggtatata ccgtgggagg aagcatgatg tactcatctg tcgcttccgg atcagccatg    1380
    gaaatacagc tcccgagagg tgcagcctat gtagtacgta tcggcagcca tgcgatcaaa    1440
    accgcgatgc cgtaa                                                    1455
    <212> Type : DNA
    <211> Length : 1455
          SequenceName : SEQ ID 560
          SequenceDescription :

    Sequence
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    <213> OrganismName : Shigella flexneri 2a str. 2457T
    <400> PreSequenceString :
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    gtttatgtaa accttgcgcc tgtcgtgaat gtggggcaaa acctggtcgt agatctttcg    180
    acgcaaatct tttgccataa cgattatccg gaaaccatta cagactatgt cacactgcaa    240
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    agtagctatc catttccgac caccagcgaa acgccgcggg ttgtttataa ttcgagaacg    360
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    ccaattcctc ttaccgttta ttgtgcgaaa agccaaaacc tggggtatta cctctccggc    660
    acaaccgcag atgcgggcaa ctcgattttc accaataccg cgtcgttttc accagcgcag    720
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    <212> Type : DNA
    <211> Length : 903
          SequenceName : SEQ ID 561
          SequenceDescription :

    Sequence
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<212> Type : DNA
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      SequenceDescription :

Sequence
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tcagtgtgtt ctatcgttcc ggacgatcac aaactggaag ttgatatggg tgatatcggt      180
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<212> Type : DNA
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<211> Length : 564
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      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
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gctctggccg atactacgac ggtaaatggt gggaccattc actttaaagg ggaagttgtt     120
aacgccgctt gcgcagttga tgcaggctct gttgatcaaa ccgttcagtt gggacaggtt     180
cgtaccgcta gcctgaagca ggctggagca accagctctg ccgttggttt taacattcag     240
ctgaatgatt gcgataccac tgttgccaca aaagccgctg ttgccttctt aggtacggca     300
attgatgcta cgcgtactga tgtactggct ctgcagagtt ctgctgcagg tagtgcaaca     360
aacgttggcg tgcagatcct agacagaaca ggcaatgctc tgacgctgga cggtgcgaca     420
tttagtgcac aaacaaccct gaataacggt accaacacca ttccgttcca ggcgcgttat     480
tatgcaatcg gcgaggcaac cccgggtgca gctaatgcgg atgcaacctt caaggttcag     540
tatcaataa                                                             549
<212> Type : DNA
<211> Length : 549
      SequenceName : SEQ ID 564
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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agcctcaccg ccgcgcaaaa agcgacgcta acccctattt caaatcagca atcgtcgttt     120
accgctaaac ttagcgccta cggtacgctg aaaagcgcgc tgacgacttt ccagaccgcc     180
aatactgcat tgtctaaagc cgatcttttt tccgccacca gcaccaccag cagcaccacc     240
gcgttcagtg ccaccaccgc gggtaacgcc atcgccggga aatacaccat cagcgtcacc     300
catctggcgc aggcgcaaac cctgaccacg cgcaccacca gagatgatac gaaaacggcg     360
atcgccacca gcgacagcaa actcaccatt caacaaggcg acgacaaaga tccgattacc     420
attgatatca gcgcggctaa ctcatcgtta agcgggatcc gtgatgccat caacaacgca     480
aaagcgggcg taagtgcgag catcattaac gtgggtaacg gtgaatatcg tctgtcagtc     540
acatcaaatg acaccggcct tgataatgcg atgacactct cggtcagcgg tgatgatgcg     600
ctacaaagtt ttatgggcta tgacgccagt gccagcagca acggtatgga ggtctcggtc     660
gccgcccaga atgcgcagct gacggtcaac aacgtcgcca tcgagaacag cagcaacact     720
atcagcgacg cgctggaaaa catcactctg aacctgaacg atgtcaccac gggcaaccag     780
acgctaacca tcactcagga cacctccaaa gtgcaaacgg cgattaaaga ctgggtgaat     840
gcctataact cgctaataga taccttcagc agcctgacca aatacaccgc cgtagatgcg     900
ggagctgata gccagagttc tagcaatggc gcactgctcg gcgactccac gctgcggacg     960
attcagacgc agttgaagtc gatgctgagt aataccgtca gttcttccag ctataaaacg    1020
ctggcgcaga ttggtatcac gaccgatccc agcgatggca aactggaact ggatgccgac    1080
aaactcaccg ctgcactgaa aaaagatgcc agcggcgtag gtgcattgat tgttggcgat    1140
ggtaaaaaaa ccggcatcac aaccaccatc ggcagcaacc tgaccagttg gctttcgaca    1200
acgggcatta ttaaagccgc taccgatggc gttagtaaaa ccctgaataa gttaactaaa    1260
gactacaacg ccgccagcga tcgcattgat gcgcaggtcg cgcgctacaa agaacaattt    1320
acccaactgg acgttttaat gacctcgtta aacagcacca gcagctactt aacgcagcag    1380
ttcgaaaaca acagtaattc caagtaa                                        1407
<212> Type : DNA
<211> Length : 1407
      SequenceName : SEQ ID 565
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
gtggagggta aagctgataa tgtcgtactg gaaaatggcg gacgcctgga tgtgctgacc      60
ggacacacag ccactaatac ccgcgtggat gatggcggaa cgctggatgt ccgcaacggt     120
ggcaccgcca ccaccgtatc catgggaaat ggcggtgtac tgctggccga ttccggtgcc     180
gctgtcagtg gtacccggag cgacggaaag gcattcagta tcggaggcgg tcaggcggat     240
gccctgatgc tggaaaaagg cagttcattc acgctgaacg ccggtgatac ggccacggat     300
accacggtaa atggcggact gttcaccgcc aggggcggca cactggcggg caccaccacg     360
ctgaataacg gcgccatact taccctttcc gggaagacgg tgaacaacga taccctgacc     420
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atccgtgaag gcgatgcact cctgcaggga ggcgctctca ccggtaacgg cagcgtggaa 480
aaatcaggaa gtggcacact cactgtcagc aacaccacac tcacccagaa agccgtcaac 540
ctgaatgaag gcacgctgac gctgaacgac agtaccgtca ccacggatgt cattgctcag 600
cgcggtacag ccctgaagct gaccggcagc actgtgctga acggtgccat tgaccccacg 660
aatgtcactc tcgcctctgg tgccacctgg aatattcccg ataacgccac ggtgcagtcg 720
gtggtggatg acctcagcca tgccggacag attcatttca cctccacccg cacagggaag 780
ttcgtaccgg caaccctgaa agtgaaaaac ctgaacggac agaatggcac catcagcctg 840
cgtgtacgcc cggatatggc acagaacaat gctgacagac tggtcattga cggtggcagg 900
gcaaccggaa aaaccatcct gaacctggtg aacgccggca acagtgcgtc ggggctggcg 960
accagcggta agggtattca ggtggtggaa gccattaacg gtgccaccac ggaggaaggg 1020
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aacgcctccg gcctgtgggc tgacattgtg gcccagggaa cccgccacag catgaaagcc 1560
tcatcggaca ataacgactt ccgcgtccgg ggctggggct ggctgggttc gctggaaacc 1620
ggtctgccct tcagtatcac tgacaatctg atgctggagc cgcaactgca gtacacctgg 1680
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ccggtgaact ggtgggtaca gccttctgtt atccgcacct tcagctcccg gggggacatg 1920
agcatgggta cagccgcagc cggcagtaac atgacgttct caccgtcaca gaatggtacg 1980
tcactggacc tgcaggccgg actggaagcc cgtgtccggg aaaatatcac cctgggcgtt 2040
caggccagtt atgcccacag catcaacggc agcagcgctg aaggttataa cagtcaggcc 2100
acactgaatg taaccttctg a 2121
<212> Type : DNA
<211> Length : 2121
SequenceName : SEQ ID 566
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atggcctttt ctcaagcggt tagcggatta aacgctgccg ccaccaacct cgatgttatt 60
ggcaacaata tcgccaactc cgccacctac ggctttaaat caggcacggc ctcttttgcc 120
gatatgtttg ccggttcgaa agtgggactg gggggtaaaag ttgccggtat cactcaggac 180
tttaccgatg gcacgaccac caacaccggg cgaggtctgg acgttgctat cagccagaac 240
ggtttttttcc gtctggtaga cagcaacggt tcggtgttct acagccgtaa cggacaattt 300
aagctggatg aaaaccgtaa cctgttgaat acgcaaggtt tacagctgac gggttacccg 360
gtaaccggta cgccgccgac tattcagcaa ggggcgaatc cgaccaatat ttcgatcccg 420
aataccctga tggcagcgaa aactaccacc acggcgtcga tgcagatcaa cctgaattcc 480
agtgatccgc ttcctactgt tacgccattc agcgccagca atgcggatag ctataacaaa 540
aaaggttcgg tgactgtttt cgacagtcag ggtaatgctc atgacatgag cgtctatttt 600
gtgaagaccg gggataataa ctggcaggtc tacacccagg atagcagtga tccaaacagc 660
attgcgaaga cagcgacaac actggaattt aatgctaatg gcacattagt ggatggtgcg 720
atggcgaata atatcgcaac cggcgcaatt aacggtgcag aacccgccac gtttagtctg 780
agcttcctca actccatgca gcaaaatacc ggcgctaaca acattgtggc aaccacccag 840
aatggctaca aaccgggcga tctggtgagt tatcaaatca atgatgacgg tacggttgtc 900
ggcaacaatt ccaacgaaca aacccaactg ctggggcaga ttgtactggc gaactttgcc 960
aacaacgaag gtctggcatc cgaaggcgac aacgtctggt ctgcgacgca atcttctggc 1020
gtggcgctgt tggggacagc cgggacggga aactttggca ctctgaccaa cggtgcgctg 1080
gaagcgtcca acgtcgatct cagtaaagaa ctggtcaata tgatcgttgc ccagcgtaac 1140
tataagtcta acgcccagac catcaaaacc caggaccaga tcctcaacac gcgggttaac 1200
ttacgctaa 1209
<212> Type : DNA
<211> Length : 1209
SequenceName : SEQ ID 567
SequenceDescription :

Sequence

<213> OrganismName : Shigella flexneri 2a str. 2457T

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<400> PreSequenceString :
atgaaactcg tgcacatggc cagtggttta gcggttgcga ttgcgttggc ggcttgcgca      60
gataaaagcg cggatattca gacgccagcc ccggctgcaa atacgtctat ttcagcaaca     120
caacaacctg ctatccagca accgaatgtc tccggtactg tctggatccg tcagaaagtc     180
gcactgccgc ctgatgctgt gctgaccgtg acactttctg acgcgtcgtt agccgatgca     240
ccgtcaaaag tgctggcgca gaaagcggtg cgtactgaag gtaaacagtc accattcagc     300
tttgttctgc catttaaccc ggcagatgtt cagccgaacg cgcgtattct gttgagtgcg     360
gcgattaccg tgaatgacaa actggtattt atcaccgata ccgttcagcc ggtgatcaac     420
cagggcggaa ctaaagccga cctgacattg gtgccggtac agcaaaccgc cgtgccggtt     480
caggccagcg gtggcgcaac gactaccgta ccttcgactt caccaactca ggtgaatccg     540
tcttcggcag ttcccgctcc tacgcaatat taa                                  573
<212> Type : DNA
<211> Length : 573
      SequenceName : SEQ ID 568
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgatcataa aaaaaagcgg tggtcgctgg cagctaagcc tgctggcgag cgtggtaatc      60
agtgcctttt ttctcaacac agcttacgcc tggcaacaag aatatatcgt tgatacgcaa     120
cccggacatt ccacagagcg ttacacctgg gatagtgatc atcaacctga ttacaacgat     180
atttgtcgc aacgtattca aagtagccaa agggcgctgg gactggaagt caatctggcg     240
gaagaaactc ctgtggatgt gaccagcagt atgagtatgg gctggaattt tcctttatat     300
gaacaggtta caaccggccc ggtcgcggca ttacattacg atggcacaac cacctcgatg     360
tataacgagt ttggcgacag tactaccacg ctgaccgatc cgttatggca tgccagcgtg     420
agtagcttag gctggcgtgt tgactcccgg cttggcgatc tccgaccctg ggcgcaaatc     480
agctataacc agcaatttgg cgagaatatc tggaaggcgc aatcaggcct gagccggatg     540
acggcgacaa accagaacgg caactggctg gatgtcaccg taggcgctga tatgttgctc     600
aatcaaaata ttgccgccta tgctgcgcta actcaggcag aaaataccac taataatagc     660
gactatctgt atacgatggg ggttagcgcc agattttaa                            699
<212> Type : DNA
<211> Length : 699
      SequenceName : SEQ ID 569
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaaatggt gcaaacgtgg gtatgtattg gcggcaatgt tggcgctcgc aagtgcgacg      60
atacaggcag ccgatgtcac catcacggtg aacggtaagg tcgtcgccaa accgtgtacg     120
gtttccacca ccaatgccac ggtagatctc ggcgatcttt attctttcag tcttatgtct     180
gccggggcgg catcggcctg gcatgatgtt gcgcttgagt tgactaattg tccggtggga     240
acgtcgaggg tcactgccag cttcagcggg gcagccgaca gcaccggata ttataaaaac     300
caggggaccg cgcaaaacat ccagttagag ctacaggatg acagtggcaa cacattgaat     360
actggcgcaa ccaaaacagt tcaggtggat gattcctcac aatcagcgca cttccccgtta    420
caggtcagag cattgacggt aaatggcgga gccactcagg gaaccattca ggcagtgatt     480
agcatcacct atacctacag ctga                                            504
<212> Type : DNA
<211> Length : 504
      SequenceName : SEQ ID 570
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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tcctcaggag ggtgtggagc cgacagcact agcggtgcga caaattacag cagtgtggtt     120
gatgatgtta cggtgaacca gacagataac gtgacaggac gggagtttac ctctgcaacg     180
ctaagtagca ctaactggca atacgcctgt tcctgctctg cgggtaaggc agttaaactt     240
gtctatatgg tcagccccgt acttaccacc actggacatc agacaggata ttacaaactc     300
aatgacagcc tggatattaa aaccacatta caggcaaacg acattccagg actcacaacc     360
gaccaggttg tctctgttaa cacccgattc acacagataa aaagcagcac cgtatattct     420
gctgcaaccc aaacgggtgt ttgccagggt gacacgtctc gttatggacc cgttaatatt     480
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ggtgcaaata ccacctttac cctgtatgtc accaagccat ttctcggctc gatgaccatt     540
ccgaaaacgg atattgccgt cattaaaggc gcgtgggtcg atggaatggg aagcccgtct     600
acaggtgact tccatgattt agtcaagtta tcgattcagg gaaatctcac cgccccacag     660
tcgtgcaaaa ttaatcaggg cgatgttatt aaagttaatt ttggattcat caatggtcag     720
aagtttacca cccgcaatgc catgccagac ggttttactc cagtagactt tgatatcact     780
tatgactgtg gtgatacttc aaagattaaa aactcgttgc aaatgcgcat cgacggtaca     840
actggggtag tagaccagta caacctggtc gccaggcgaa gaagttcaga caatgtgccc     900
gatgtcggta ttcgtattga aaatctcggc ggcggagttg caaatattcc ttttcagaac     960
ggtatccttc ccgttgatcc ttccgggcat ggcaccgtca atatgcgcgc ctggccagtt    1020
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atggtgcggt aa                                                        1092
<212> Type : DNA
<211> Length : 1092
      SequenceName : SEQ ID 571
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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ggctgcgcct ggataccctc cacgccgctg gtgcaggggg cgaccagtgc acaaccggtt     120
cccggtccga cgcccgtcgc caacggttct attttccagt ctgctcagcc gattaactat     180
ggctatcaac cgctgtttga agatcgtcga ccacgcaata ttggcgatac gctgaccatc     240
gtgttgcagg agaacgtcag cgccagcaaa agctcctctg cgaatgccag ccgtgacggt     300
aaaactaatt ttggctttga tactgtgccg cgctatttgc aggggctgtt tggtaacgct     360
cgtgccgatg tcgaagcctc cggtggtaac acgttcaacg gaaagggcgg ggccaatgcc     420
agcaatacct ttagcggcac gttgacggtg acggttgacc aggtactggt caacggcaac     480
ctgcatgtgg tgggtgaaaa acagattgcc attaatcagg gtaccgaatt tattcgcttc     540
tcgggcgtgg ttaatccacg cactatcagc ggcagcaata ccgtaccgtc tactcaggtg     600
gcggatgcgc gtattgaata cgtaggcaat ggctacatta acgaagcgca aaatatgggc     660
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<212> Type : DNA
<211> Length : 699
      SequenceName : SEQ ID 572
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gtggttgcct ccgaactggc ccgcgcacag ggtaaacgtg gcggtgtggc ggttgcactg     120
tctcttgccg cggtcacgtc actcccggtg ctggctgctg acatcgttgt gcacccgggt     180
gaaacagtga atggcggaac actggtaaac catgacaacc agtttgtatc cggaacagct     240
gatggcgtga ctgtcagtac cgggcttgag ctggggccgg acagtgacga aaacaccggc     300
gggcaatgga taaaagcggg tggcacaggc agaaacacca ctgtcaccgc aaatggtcgt     360
cagattgtgc aggcaggagg aactgccagt gatacggtta ttcgtgatgg cggagggcag     420
agccttaacg gactggcggt gaacaccacg ctggataaca gaggtgagca gtgggtacac     480
gggggaggga aagctgccgg tacaattatt aaccaggatg gttaccagac cataaaacat     540
ggcggactgg caaccggaac catcgtcaac accggtgcag aaggtggtcc ggagtctgaa     600
aatgtgtcca gcggtcagat ggtcggaggg acggctgaat ccaccaccat caataaaaat     660
ggccggcagg ttatctggtc ttcggggatg gcacgggaca ccctcattta cgccggtggt     720
gaccagacgg tacacggaga ggcacataac acccgactgg aggggggtaa ccagtatgta     780
cacaacggtg gcacggcaac agagacgctg ataaaccgtg atggctggca ggtgattaag     840
gaaggaggaa ctgccgcgca taccaccatc aaccagaaag aaagctgcag gtga           894

<212> Type : DNA
<211> Length : 894
      SequenceName : SEQ ID 573
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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tccaccgggg tgcatgctgc gtcctggaaa gatgcgctct ccagcgccgc cagcgaactt     120
ggcaaccaaa acagcacgac acaggaaggc ggttggtcgc tcgcgtcatt aactaacttg     180
cttagcagcg gaaaccaagc cttaagcgca gataacatga acaatgccgc aggcattctg     240
caatactgcg cgaagcaaaa gctggcttcg gtaaccgatg ccgaaaacat caagaaccag     300
gtgctggaaa agctgggcct gaacagtgaa gagcaaaaag aagacaccaa ctatctggac     360
ggtattcagg gtttgctgaa aacaaaagat ggtcagcaac tcaatctgga taacatcgga     420
acgactccgc tggcagaaaa ggtgaaaacc aaagcctgcg atctggtgtt aaagcagggg     480
ctgaacttca tttcctga                                                   498
<212> Type : DNA
<211> Length : 498
      SequenceName : SEQ ID 574
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgtttaaag gacaaaaaac attggccgca ctggccgtat ctctgctgtt cacagcacct      60
gtttatgcgg ctgatgaagg atccggtgaa attcacttta aaggtgaagt tattgaagca     120
ccgtgtgaaa tacatcagga tgatattgat aaagaggttg aactcggtca ggtgaccacc     180
agccacatta atcagtcaca tcacagcgat gccgttgctg tcgacctgct cttagtcaac     240
tgtgatctgg aaaactccag caacggttcc ggtggcaaga tttctaaagt tgcagtcacc     300
tttgatagct cagcgaaaac caccggcgca gatccgattc tcaacaacac cagcacgggt     360
gaagccaccg gcgtcggcgt acgtttaatg aataaagatc aaagcaatat cgttttaggc     420
accgctactc cagatatcga cctggctccg acctccagcg aacaaacgct gaatttcttt     480
gcctggatgg aacaaattga tcaggctaca cctgtaacgc caggcgcagt tacggcgaat     540
gcaacctacg tgctggatta taaataa                                         567
<212> Type : DNA
<211> Length : 567
      SequenceName : SEQ ID 575
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgagcgcgg gaagcccaaa attcaccgtt cgccgcattg cggctttgtc actggtttcg      60
ctatggctgg caggctgttc tgacacttca aatccaccgg caccggtcag ctccgttaat     120
ggcaatgcgc ctgcaaatac taattctggt atgttgatta cgccgccgcc gaaaatgggg     180
acgacgtcta cagcgcagca accgcaaatt cagccggtac agcagccaca aattcaggct     240
actcaacaac cgcaaatcca gccagtgcag ccagtagctc agcagccggt acagatggaa     300
aacggacgca tcgtctataa ccgtcagtat gggaacattc cgaaaggcag ttatagcggc     360
agtacctata ccgtgaaaaa aggcgacaca cttttctata tcgcctggat tactggcaac     420
gatttccgtg accttgctca gcgcaacaat attcaggcac catacgcgct gaacgttggt     480
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caggccgacg cagcagagca aggagttgtg atcaagcctg cacaaaattc caccgttgct     600
gttgcgtcgc aaccgacaat tacgtattct gagtcttcgg gtgaacagag tgctaacaaa     660
atgttgccga acaacaagcc aactgcgacc acggtcacag cgcctgtaac ggtaccaaca     720
gcaagcacaa ccgagccgac tgtcagcagt acatcaacca gtacgcctat ctccacctgg     780
cgctggccga ctgagggcaa agtgatcgaa acctttggcg cttctgaggg gggcaacaag     840
gggattgata tcgcaggcag caaaggacag gcaattatcg cgaccgcaga tggccgcgtt     900
gtttatgctg gtaacgcgct gcgcggctac ggtaatctga ttatcatcaa acataatgat     960
gattacctga gtgcctacgc ccataacgac acaatgctgg tccgggaaca acaagaagtg    1020
aaggcggggc aaaaaatagc aaccatgggt agcaccggaa ccagttcaac acgcttgcat    1080
tttgaaattc gttacaaggg gaaatccgta aacccgctgc gttatttgcc gcagcgataa    1140

<212> Type : DNA
<211> Length : 1140
      SequenceName : SEQ ID 576
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
gtgattaaat ttctctctgc attaattctt ctactggtta cgacggcggc tcaggctgag      60
cgtattcgcg atctcaccag tgttcagggg gtaaggcaaa actcactgat tggctatggc     120
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ttggtagtgg ggctggatgg cactggtgac cagacaaccc agacgccgtt taccacacaa      180
acgcttaata acatgctctc acagctggga attaccgttc cgacgggcac caatatgcag      240
ctaaaaaacg tcgctgcggt aatggtgaca gcgtcacttc ctccgtttgg acgtcagggg      300
caaaccatcg atgtggtggt ttcttccatg ggtaatgcca aaagcttgcg tggaggtacg      360
ttgttgatga caccgcttaa gggcgttgac agtcaggtgt atgcgctggc gcagggcaat      420
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gctgacacca tcaaccgcgt gcgtggatat ggcagcgcca ccgcgttaga tgcgcggact      660
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cagactgttg ttactccaca aacgcagatc gatttacgcc agagcggcgg ttcgctgcaa      960
agcgtacgtt ccagcgccag cctcaataac gtggtgcgtg cgctcaatgc gctgggcgct     1020
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aaactggaaa tcatctga                                                  1098
<212> Type : DNA
<211> Length : 1098
      SequenceName : SEQ ID 577
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
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tgtaaattcg aagcgggtgg tgattcagta agtattaata tgccgactgt accaaccact      180
gtctttgaag gtaaagctaa atattctacc tatgatgatg cagtcggtgt aaccagcagc      240
atgttaaaaa ttagctgccc gaaagaagtt gctggtgtaa aactctcgtt gatcacaaac      300
gacaaaataa ccggtaacga taaggcgata gccagtagca acgataccgt aggtgataac      360
agcgatgtcc tagatgtttc tgcacctttt aacattgaga gttataaaac agcggaaggt      420
caatatgcta ttccgtttaa agcaaaatac ctgaaactga cagataactc agtgcaatca      480
ggtgatgtgt tatcttctct ggttatgcgt gtggcgcagg attaa                      525
<212> Type : DNA
<211> Length : 525
      SequenceName : SEQ ID 578
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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ttagttcggg tgatgagtgc gccgcagctg tacgttggtc aggaggcacg ctttggtggc      180
aaagtggttg cggtacaaaa ccagcaaggg aaaacccgcc tggaaattgc taccgtaccg      240
ctggacagcg gagctaggcc gacgctggga gaaccttctc gcggtcgcat ttatgccgat      300
gtgaacggtt ttctggaccc ggtggatttc cgtggacaac tggttacggt agtcgggcca      360
atcaccggtg cggttgacgg caaaatcggc aatacgccct ataaatttat ggtgatgcaa      420
gtaacgggtt acaaacgttg gcatttaacc cagcaggtga ttatgccgcc tcagccgatt      480
gatccatggt tttatggcgg tcgtggctgg ccctatggct acggcggatg ggctggtat       540
aatcccggcc ccgcgagagt acaaacagtt gtaaccgaat aa                         582
<212> Type : DNA
<211> Length : 582
      SequenceName : SEQ ID 579
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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ttggctgcgg atagcacgat tactatccgc ggctatgtca gagataacgg ctgtagtgtg      120
gccgctgaat caaccaattt tactgttgat ctgatggaaa acgcggcgaa gcaatttaac      180
aacattggcg cgacgactcc tgtcgttcca tttcgtattt tgctgtcacc ctgtggtaat      240
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gccgtttctg ccgtaaaagt tgggtttacc ggcgttgcag atagccacaa tgccaacctg     300
cttgcacttg aaaatacggt gtcagcggct gcgggactgg gaatacagct tctgaatgag     360
cagcaaaatc aaataccccт taatgctcca tcgtctgcga tttcgtggac gaccctgacg     420
ccgggtaaac caaatacgct gaatttttac gcccggctaa tggcgacaca ggtgcctgtc     480
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<212> Type : DNA
<211> Length : 531
      SequenceName : SEQ ID 580
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
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gcgcatgaag caggcgaatt ttttatgcgt gcaggttctg caaccgtacg tccaacagaa     120
ggtgctggtg gtacgttagg aagtctgggt ggattcagcg tgaccaataa cactcaactg     180
ggcttgacgt ttacttatat ggcgaccgac aacattggtg tggaattact ggcagcgacg     240
ccgttccgcc ataaaatcgg cacccgggcg accggcgata ttgcaaccgt tcaccatctg     300
ccgccaacac tgatggcgca gtggtatttt ggtgatgcca gcagcaaatt ccgtccttac     360
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gaggcggggc tttccgatct cagtctgaaa gattcctggg gagctgccgg gcaggtgggg     480
gttgattatc tgattaaccg tgactggttg gttaacatgt cagtgtggta catggatatc     540
gataccaccg ccaattataa gctaggcggt gcacagcaac acgatagcgt acgcctcgat     600
ccgtgggtgt ttatgttctc agcaggatat cgtttttaa                            639
<212> Type : DNA
<211> Length : 639
      SequenceName : SEQ ID 581
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
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atcgtgatgt ttttatcggt tggactgcta ttggcgggct gttcgggtag caaatcatcc     120
gatacaggaa cgtattccgg ctccgtttac accgtgaaac gggggatac gctatatcgt      180
atttcgcgca ccacgggaac cagcgtaaaa gagctggcgc gactgaacgg catttccccc     240
ccttacacca ttgaagttgg tcagaaacta aaactgggtg gggcgaaaag tagcagtagt     300
acacgtaaat caaccgccaa atcaacgact aaaaccgcat cggttacacc gtcatcagcg     360
gtaccgaaat cttcctggcc gccagtaggg caacgttgtt ggttatggcc aacgacaggg     420
aaagttatca tgccgtattc gacagcagat ggcggcaata aagggattga tatctcagct     480
ccacggggta cacctattta cgccgcgggt gcaggaaagg tggtgtatgt gggcaaccag     540
ctgcgtggct acggtaatct catcatgatt aaacacagtg aagattacat tacggcttac     600
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gccactatgg ggagcacgga tgcggcatct gttcgcctgc atttccagat tcgttaccgt     720
gcaacggcaa ttgatccgct acgttacttg ccgccgcagg gcagcaagcc aaaatgctga     780

<212> Type : DNA
<211> Length : 780
      SequenceName : SEQ ID 582
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
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gcgaaggatg acgccgcggg tcaggcgatt gctaaccgtt ttacttctaa cattaaaggc     180
ctgactcagg ctgcacgtaa cgccaacgac ggtatttctg ttgcacagac cactgaaggc     240
gcgctgtccg aaatcaacaa caacttacag cgtatccgtg agctgacggt tcaggcttct     300
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gacgaaattg accgcgtatc cggtcagacc cagttcaacg gcgtgaacgt actggcaaaa     420
gacggttcga tgaaaattca ggttggtgcg aatgacggcc agactatcac tattgatctg     480
aagaaaattg actctgatac gctggggctg aatgggttta atgtgaatgg tggcggggct     540
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gtggctaata ctgctgcatc taaagctgac ttggtagctg ctaatgcaac agtggtcggc     600
aacaaatata ctgtgagtgc gggttacgat gctgctaaag cgtctgattt gctggctgga     660
gttagtgatg gtgatactgt tcaggcaacc attaataacg gcttcggaac ggcggctagt     720
gcaacgaatt acaagtatga cagtgcaagt aagtcatact cttttgatac cacaacggct     780
tcagctgccg atgttcagaa atatttgacc ccgggagttg gtgataccgc taagggcact     840
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agcaatggag ataaactcta cattgataca actgggcgct taacgaaaaa cggctctggt     960
gcttctttga ctgaggctag tctgtccaca cttgcagcca ataataccaa agcgacaacc    1020
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tcgggaaaca atgttgattt cactactgca ggttatagcg tcaacggcac aactggcgct    1200
gtaacaaaag gtgttgattc ggtttatgtt gataacaacg aggcgttgac cacatctgat    1260
actgtagatt tttacctaca ggatgatggt tcagtgacta acggcagcgg taaggcagtt    1320
tataaagatg ctgatggtaa attgacgaca gatgctgaaa caaaagcagc tacgacagcc    1380
gatcccctga aagctctgga tgaagccatc agctccatcg acaaattccg ctcctccctg    1440
ggtgcggtgc aaaaccgttt ggattccgca gtcaccaacc tgaacaacac cactaccaac    1500
ctgtctgaag cgcagtcccg tattcaggac gccgactatg cgaccgaagt gtccaacatg    1560
tcgaaagcgc agattatcca gcaggccggt aactccgtgc tggcaaaagc caaccaggta    1620
ccgcagcagg ttctgtctct gctgcagggt taa                                 1653
<212> Type : DNA
<211> Length : 1653
      SequenceName : SEQ ID 583
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
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tccgtagctg cgacttctac cgtaactggc ggttacgcac agagcgacgc tcagggccaa     120
atgaacaaaa tgggcggttt caacctgaaa taccgctatg aagaagacaa cagcccgctg     180
ggtgtgatcg gttctttcac ttacaccgag aaaagccgta ctgcaagctc tggtgactac     240
aacaaaaacc agtactacgg catcactgct ggtccggctt accgcattaa cgactgggca     300
agcatctacg gtgtagtggg tgtgggttat ggtaaattcc agaccactga atacccgacc     360
tacaaacacg acaccagcga ctacggtttc tcctacggtg ctggtctgca gttcaacccg     420
atggaaaacg ttgctctgga cttctcttac gagcagagcc gtattcgtag cgttgacgta     480
ggcacctgga ttgccggtgt tggttaccgc ttctaa                              516
<212> Type : DNA
<211> Length : 516
      SequenceName : SEQ ID 584
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gcactggcag aagatggtgt tgttaacttc gtcggtgaaa ttgtcgacac tacttgtgaa     120
gttacctccg atacagccga tcaaattgtc ccactgggta aagtcagtaa aaatgcattt     180
tcaggtgtag gtagtctggc gtcgccacag aagttcagta ttaaacttga aaattgcccg     240
gcaacgtaca ctcaagcagc cgttcgtttt gatggtacag aagcgcctgg cggcgacggc     300
gacctgaaag tgggtacgcc gcttacagca ggcaaccctg gtgattttac cggtacagga     360
caagcgattg cggcaaccgg cgttggtatt cgtattttta accagtccga taattcgcag     420
gttaaacttt ataacgactc tgcttatacc gctatcgatg ctgaaggcaa ggctgaaatg     480
aagtttattg cacgctatgt ggcaaccaat gcgaccgtaa cggctggtac ggcgaacgct     540
gattcacaat ttactgtcga atataagaaa taa                                 573
<212> Type : DNA
<211> Length : 573
      SequenceName : SEQ ID 585
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
atgaaaaaga gcactctggc attagtggtg atgggcattg tggcatctgc atctgtacag      60
gctgcagaaa tatataataa agacggtaat aaactggatg tctatggcaa agttaaagcc     120
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atgcattata tgagtgataa cgccagtaaa gatggcgacc agagttatat ccgttttggt     180
tttaaaggtg aaactcaaat taacgatcaa ctgactggtt atggtcggtg ggaagcggag     240
tttgccggaa ataaagcgga gagtgatact gcacagcaaa aaacgcgtct cgcttttgcc     300
gggttgaaat ataaagattt gggttctttc gattatggtc gtaacctggg cgcgttgtat     360
gacgtggaag cctggaccga tatgttcccg gaatttggtg gcgattcctc ggcgcagacc     420
gacaacttta tgaccaaacg cgccagcggt ctggcgacgt atcggaacac cgacttcttc     480
ggcgttatcg atggcctgaa cttaaccctg caatatcaag ggaaaaacga aaaccgcgac     540
gttaaaaagc aaaacggcga tggcttcggc acgtcattga catatgactt tggcggcagc     600
gatttcgcca ttagtggggc ctataccaac tcagatcgca ccaacgagca gaacctgcaa     660
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aatatttatc tggcaacttt ctattctgaa acacgcaaaa tgacgccaat aactggcggc     780
tttgccaata agacacagaa ctttgaagcg gtcgctcaat accagtttga ctttggtctg     840
cgtccatcgc tgggttatgt cttatcgaaa gggaaagata ttgagggcat cggtgatgaa     900
gatctggtca attatatcga cgtcggtgct acgtattatt tcaacaaaaa tatgtcagcg     960
tttgttgatt ataaaatcaa ccaactggat agcgataata agctgaatat taataatgat    1020
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<212> Type : DNA
<211> Length : 1056
      SequenceName : SEQ ID 586
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
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gatgatggtc agcaacagac ggtaagtgta ccgcagcctg cggtatgtaa cggcccccata    120
gttgaaatta gcggggcgga cccgcgtttc gaaccactga acgcgacggc aaatcaggat     180
taccagcgcg acggtaaaag ctacaaaatc gtgcaggatc cgtctcgatt tagccaggcg     240
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caagccgcct cgcaaagcgc cagcggcaac tttatggtgc aagtcggggc cgtaagcgat     900
caggctcgtg cgcaacagta ccaacagcaa ctgggacaga agttcggcgt ccccggtcgc     960
gtaactcaaa atggcgcggt ctggcggatc cagcttggcc cattcgccag caaagccgaa    1020
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gcgcagtag                                                            1089
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<211> Length : 1089
      SequenceName : SEQ ID 587
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
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gtcgggatgg ctgggcctga acaagtcagt atgcatattt atgggaatgt ggtcgatcag     120
ggctgtgatg tcgccaccaa aagtgcatta caaaatattc atattggtga ttttaatatc     180
agtgattttc aggccgcgaa taccgtaagc actgctgctg atttgaatat tgatatcacc     240
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gccgtgcaaa ttcttgatgc gcaaagtcag caagaaatcc cgctcaatca ggtccagcct     420
cttacgccct taaaagccgg ggataacaca ctcaaatatc aacttcgtta taagtccaca     480
aaggcgggag caacgggcgg taatgcgacg gcggttctct attttgatct ggtttaccag     540
tga                                                                  543
<212> Type : DNA
<211> Length : 543
      SequenceName : SEQ ID 588
      SequenceDescription :
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Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
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tcttcattta atcaggcagc cataattggt caggctggga ctaataatag tgctcagtta     180
cggcagggag gctcaaaact tttggcggtt gttgcgcaag aaggtagtag caatcgggca     240
aagattgacc agacaggaga ttataacctt gcatatattg atcaggcggg cagtgccaac     300
gatgccagta tttcgcaagg tgcttatggt aatactgcga tgattatcca gaaaggttct     360
ggtaataaag caaatattac acagtatggt actcaaaaaa cggcagttgt agtgcagaga     420
cagtcgcaaa tggcaattcg cgtgacacaa cgttaa                               456
<212> Type : DNA
<211> Length : 456
      SequenceName : SEQ ID 589
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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ggatgccagt caaatgctga cgatcatgcc gccgatgttt atcaaaccga tcaactgaat     120
accaaacaag aaactaaaac cgttaatatt atttccattc ttcccgcaaa agttgccgta     180
gacaactccc aaaataaacg gaacgcacaa gccttcggcg cgcttattgg cgcagtcgct     240
ggcggtgtta tcggccacaa cgtcggttct ggcagcaatt ccggaacgac ggcaggggca     300
gttggcggcg gagctgtagg cgcggcagcg ggttctatgg tgaatgataa aacccttagtg     360
gaaggtgttt ctttaacata taaggaaggc accaaagtgt atacctccac ccaggagggt     420
aaagagtgcc agtttacgac aggtttagcc gttgttatta ccacaacgta taacgaaacg     480
cgtattcagc caaataccaa atgtcctgaa aagagctaa                            519
<212> Type : DNA
<211> Length : 519
      SequenceName : SEQ ID 590
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
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gcgctgtttg tttgcctgaa ggcggcgaac gtgacgtcca tacgtactga atcgacctac     120
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aatagtggcg atgcgccagc tgctgcgcca ggtaataatg aaaccactga acctgtgggt     540
acaacgaaat aa                                                         552
<212> Type : DNA
<211> Length : 552
      SequenceName : SEQ ID 591
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gaagagaaga aaaaatatac gccagcgacg gtgaatcgta gcgtaagtac gaatgatcaa     180
gggtatgccg ccaatccgtt cccgaccagt agtgccgcaa aacctgatgc tgtactggtc     240
aaaaatgaag agaaaaatgc cagtgagaca ggctcgattt attcttccat gactctgaaa     300
gatttcagta agtttgtgaa agatgaaatt ggctttagtt acaacggcta ttaccgttct     360
ggttggggga ccgcctctca tggttcacct aaatcatggg cgattggttc tctgggccgc     420
tttggtaacg aatactccgg ctggtttgat ttgcagttaa aacaacgtgt ctacaacgaa     480
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aacggcaaac gggttgatgc cgttgtgatg atagatggta acgttggtca gcagtactct    540
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<212> Type : DNA
<211> Length : 1578
      SequenceName : SEQ ID 592
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
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caagtaagtg ctttacagac acaacaagct gaattacaag ctgaaaatca aagacttgaa    240
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gctgtagcag ctaatacttc ttctgctaat acatatccag cagggcaatg tacttggggt   1020
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caagttcaag aagctaacta tgcaggtaac caatctattg gtaactaccg tggttggttt   1260
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<211> Length : 1296
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      SequenceDescription :

Sequence
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acgaccacta ctagtgatgt agatactaaa gtagttggaa cacaaactgg aaatccagcg    180
accaatttgc cagaggctca agggagtgcg agtaaggaag ctgaacaaag tcaaaaccaa    240
gctggagaga caaatggttc aataccagtt gaagtaccta aaactgatct tgatcaagca    300
gcaaaagatg ctaagtctgc tggtgtcaat gttgtccaag atgccgatgt taataaagga    360
actgttaaaa cagctgaaga agcagtccaa aaagaaactg aaattaaaga agattacaca    420
aaacaagctg aggatattaa gaagacaaca gatcaatata aatcggatgt agctgctcat    480
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aatgctgcca atcaagcagc ctatcaaaaa gcccttgctg cttatcaggc tgaactgaaa     720
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gatccatcat caccgcggac ttcaactgta attaactaca aacctcaatc aactgcttat    4560
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cctttacttg gtattattgg cttagttact agttttagtt tgcttggctt aaaggctaag    4680
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<212> Type : DNA
<211> Length : 4689
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      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
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ggcaaagtat ctgatttacc tgttgcagtt gttaataaag ataaaacggc aacttatgaa     180
ggaaagaaga tgactatcgg taaagatatg actgataata tggtccgtaa taaaagtttg     240
gactatcatt ttgttgatag cgaaaaagct caaaagggac ttgaaaaagg tgattactat     300
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cctaaaaagc taacgattcc ttaccaaacg tctaaaggac atagttttgt tgcctccaaa     420
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<211> Length : 2505
      SequenceName : SEQ ID 595
      SequenceDescription :

Sequence
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<211> Length : 2079
      SequenceName : SEQ ID 596
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
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caatctcgta atgtccctgc tgtcagagct attgatgccg ctggattaga tactgccaaa    1320
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agtaatacaa gtagttcaga acaaaagtat ggtgccagca gtgaaaaaat ggccgccgct    1440
tatgctgctt tttctaatgg tggaacttat tatgaaccac aatacgtcaa taaaatagaa    1500
tttaaggatg gaacatcaga gacctatgat gctaaaggca atcgtgcgat gaaagaaacg    1560
```

```
acagcctaca tgatgacaga tatgttaaaa acagtattaa catatggtac tggtactgag    1620
gctgctattc ctggtcttta tcaagcaggt aaaacaggaa catccaacta tgatgacaat    1680
gaattggtag agatgtctga aaaacttggt attaatcctt atggacttgg tactattgct    1740
ccagatgaaa actttgttgg ttatacacct cagtattcaa tggctgtttg gacaggatat    1800
aaaaatcgct taatgcctgt ttacggagac agtatgaaaa ttgctgcgca agtctatcgt    1860
actatgatgg cttatctttc tagctcaggt aattctgatt ggaccatgcc tgacggtctc    1920
tatcgcagcg gtggttatct ttacctaaat ggttcaagtg ggtcaaatag taggtatggt    1980
gcagctcctg caacttcatc gtcatcttct tcatcatctt cttctgattc aaacaataac    2040
gatcaaaata ataatcaaac tacagaagcg tctagtgact catcttcatc aagttctgat    2100
gctacgacat cttctaatcc ataa                                            2124
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<212> Type : DNA
<211> Length : 2124
SequenceName : SEQ ID 597
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :

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atgaaatcga aaactgctaa aattactttg ctaagcagcc ttgctttggc ggcttttgga      60
gcaacgaatg tttttgcaga tgaagcatca actcaattaa attctgatac tgttgcagca     120
cctactgctg atacacaagc atcagaaccg gctgcaacag aaaaagaaca gtctcctgtt     180
gtagctgttg tcgaaagtca cacacaagga aatacaacaa cgacaacatc tcaagttact     240
tctaaagaat tggaagatgc taaggctaat gctaatcagg aaggtttaga agtcactgaa     300
actgaagctc aaaaacagcc ttcggtagaa gctgcagatg cagataacaa agcacaggca     360
caaacaatta atacagcggt agctgattat caaaaggcaa aagctgaatt tcctcaaaaa     420
caagaacaat ataataaaga ttttgaaaag tatcagtctg atgtcaagga gtatgaagct     480
caaaaggcag cttacgagca atataaaaaa gaagttgcac aaggtttggc atctgggcgt     540
gttgaaaaag cccaaggact tgtgtttatt aatgaacctg aggcaaaact ttctattgag     600
ggtgttaatc agtacctaac aaaagaagca cgtcaaaaac atgcaactga agatattctt     660
cagcaatata atactgataa ttatacagct tctgatttta cccaagcaaa tccatatgat     720
ccaaaagaag atacttggtt caaaatgaaa gtgggagatc agatttcagt tacctacgat     780
aatatcgtta attcaaaata taatgataaa aagattagta aggtaaagat taattatact     840
ctcaatagtt caacgaataa tgaaggcagt gcactggtca atttgttcca tgatccaact     900
aagacaattt tcattggtgc acagacatct aatgctggca gaaatgataa aatcagtgtg     960
acgatgcaaa ttatttttta tgatgaaaat ggcaatgaaa tcgatttaag cggcaataat    1020
gccattatga gtctctcatc gttaaaccat tggacgacta agtatggcga tcatgtggaa    1080
aaagtaaacc ttggggataa tgaattcgtt aaaataccgg gctcatctgt tgacttacat    1140
ggcaatgaaa tctattcggc taaggacaac caatataaag ctaatggtgc aacctttaat    1200
ggtgatggag cagatggctg ggatgctgtc aatgctgatg gaacgccacg tgctgcgacg    1260
gcttattatg gtgcaggtgc tatgacttac aagggagaac ccttcacctt tactgttggt    1320
ggtaatgatc aaaacttacc aacaaccatt tggtttgcga ctaattcagc tgtagctgtg    1380
cctaaagatc cgggagctaa accaacaccg ccagaaaaac cagagttgaa aaaacctact    1440
gtgacttggc ataaaaatct tgttgttgaa actaaaactg aggaagttcc tccagtgaca    1500
ccaccaacaa ctcctgatga accaacgcca gaaaagccaa aaacaccaga ggatcctcaa    1560
tcacctgtcg tagctaagtc agtaagcttt agaacggcaa gaaaaggaga aatgcgtgtt    1620
agagagcgtg attatcaacc gactcttcca catgctgggg ctgctaaaca aaatggttta    1680
gctactcttg gtgctatttc aactgcattt gctgcggcta ctttgattgc agctagaaaa    1740
aaagaaaact ag                                                        1752
```

<212> Type : DNA
<211> Length : 1752
SequenceName : SEQ ID 598
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :

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atggaacaga agattttag caaacgaaaa agtaagattg ctgggctttg tggagctatt      60
ttaacgacta cagttgttgc ccttgcgtca ggtactgtaa tcgaggctga tgagacaata     120
gaacagcctg tcgcagctga gactgtctcg caagctgatg gggacaatcc cgaacaaaca     180
acaagcgttc aacaagaaac tgctcctcaa caaacgaaaa cttctcaaag ctcagacgca     240
accgtagata gtgaagagtc agcaacttcc ccatctgatg aacagaccgt aagtcaaaat     300
gattcaaact catcatctca aattgatcaa acgatagctg atacgaatcg ctctgactct     360
gatcatattt caaaaacatc agccgctaca actgaagatc aagaagagaa agttaattct     420
gcaaaagcac aaactgctgc cgcaaccaac aatcaagaca ctcgttatag tgcgaaagat     480
gcttatggca attccaattt taacaagaca ttaactgaat ttggaaaaaa tgctaatgtt     540
```

```
gctgatgtaa cctataatgg cgtgagggat gaatatattg tagttaacga tcctagtgct     600
ccttacgttc ctaatgcaaa cgaaattgca aaatacttaa aggaatattt aacagaactc     660
cgcaacatca ataatattgc tattcctgtg ccttctgttg atcaggttat gcaaaaatac     720
gcacaagatc gggctaacga agaagccaat gaaaaaaacg gcttggatca tgatactaat     780
ttacctatcc ctaataattt aacttgggtt gccgaagatg gacatttgga tatggatagc     840
agcattcaat ccaaaagtca agaaggctat acacttgctt ctgataaagc aaccgcctac     900
tatctagcgc ttaactggtt ttctgactat tttaatattt acgatgaccc caacgatggc     960
ctcaaatcgt ttggacacgc tgtcagtatt ttgtcagacg ggggaactgg aatgggctta    1020
ggtcttgctt caggtcaaga taatgaaaag ggaatgtggt acgcacaatt ggaatttggt    1080
ggtaacgata acgaagataa taccaacgat ttttcatctt taaaaaacgg caagggagaa    1140
tgggtattat attataaagg aagtcctgtt aagtttcttc ctaacactac cttttggtat    1200
gtaaaaaaag gcacttcccc tgatgcagct tctactcctc acaacagtga taaaccttca    1260
ttccagtcat ctaaagatct tgaccctaat ttcaaggccg ataatagatt ccaagaagga    1320
aaggaagcct ctgttcatca ggctattcct gcaacattta aatctcatcg cgatgaagtt    1380
ggtaataaag accaaaattc tctttctgct caactacctg atacaggagt tcaaaaaaat    1440
aatcaattag ccttgatagc tttaggaaca ggcttgattt tactttccgg acttcttctt    1500
tcaaaaagaa aatccttaaa ataa                                           1524
<212> Type : DNA
<211> Length : 1524
      SequenceName : SEQ ID 599
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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gttgcgatca tagctttctt atttgctgta acaaagactg cagaagctga cgagacagtg     120
ataactgaac aaaggcaaac aagtaagatt aacgctagtt ctcaaaaagt ggagaatcag     180
acttcaaatc aggtggaagc aaaaacggat agtgcaaaca aggatcctca agaaaaaaca     240
ggaagtgttg caactgatgc cccttcaatg aattcagcta ataatatgag tcagtctgac     300
aaacaaaata ctgttaatga aatatcttca gatagtcagc aaacaaaaac agatgaacaa     360
actgatttac cgcaaaacag ctttaaacaa caatctgctc atgttaaaat gactactgaa     420
gcagagaaga ccccatcaca ttcgattaat acctttgtta atgatggtaa tggtaattgg     480
tattaccttg gtgctgatgg tagaaatgtt acaggcagtc atacgattgg tggcaagact     540
atgtattttg ctcaagatgg taagcaagtt aaaggtgctt ttgctcaaga ttcggatgga     600
aataaacatt attatgatag agatagtggt gagatgtgga ccaatcgctt tgtcaatgat     660
caaggcaatt ggtattatct taataatgat ggtgtccctg tcaccggtag tattactgtc     720
aatggtcagt ctctgtattt taattcggat ggtagtcagg ttaaagggaa ttttgttgaa     780
gaagatggat ctttgcgtta ttatgataaa aattctggag atttactgag aaagacaagc     840
cgaaccatta atggtgttaa ctaccaattt gataatgatg gaaatgcaag ggcgattgac     900
aaaattgagg ttgttaagac cagtcttgta gttgatagtt atgaatttgg tccttctgtt     960
tcaaagatta ttcttgagtt caatcataag gtaactcctg ctgttgttca tgctggtgca    1020
atggtaacaa ctgctggagt tcaaagaaaa attcttaatt cttatgtctc taatgcttca    1080
ggacatgtgg tttactttga tagtagccat tatgtgacac ttgaattaga tattccttat    1140
gatccaaatg atagcagccg aaatgcatca ccttttattt ttgactcagc agcctttcgt    1200
aataactggg tcaacagtta tactgtcaaa gtagataatt tgcaggtgca agcagatggt    1260
tctaatagca gtcaaattat cagttcagag caagatgcta tcaataatcg tttcttgcct    1320
acaacggatc gtttctcaga acgtggtagt tatggtaatt ttaattatgc cgcctatcaa    1380
ccagaagcag ctattggcgg tgagaagaat ccattgattg tctggttgca tggtatagga    1440
gaagtaggca ctgatattaa tattccgctt ctagccagca atgtggctcg tttaacggaa    1500
gatcctattc aaagccattt cacttctaca ggtagtggtg gtcaaaaggg agcctatgtg    1560
ctagttcctc aaagttcaat tccttggtct caaaatcaaa cagctagctt aatggcgctc    1620
attaaagcct atgtagcaag ccatccagac atcgatagcc gacgcattta tttggcaggt    1680
gtttctaatg gtggcggtat gactctggat atgggagtcg cttatcctaa ctattttgca    1740
gccttagttc ctattgctgc ttcctatagt aatcaattaa cagataatca gattaccgct    1800
gctgctttga aagctctgaa aggtcaacca atgtggttga ttcatacacg aactgataaa    1860
acaatatctg cagatagtag tgttctacca ttctataaag agttacttca agctggcgca    1920
caaaataaat ggctttccta ttatgaaact aatgttggta aacatcactc tggagtcact    1980
tataacggtc actggtcttg gatttatttc ttgaatgatc aagtaactgg cactcaaaat    2040
actgataacg ccaagaattg gtctggactt tctggcatgg ttgcgaccaa tccaacctat    2100
ggtggtgatg ctaaggctac tgtcaatggc agaacttata gtaatgtctt tgattggcta    2160
aatggtcagc gaagaaggta a                                              2181
<212> Type : DNA
<211> Length : 2181
      SequenceName : SEQ ID 600
      SequenceDescription :
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Sequence
--------
<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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ctaccaagtt ttataatgtt tctcgttcta ttctccaaaa atatttattg ggggagtagc     120
acaactattt tagctagtga tggttttcat caatatgtga tttttgatgc tctttttcgt     180
aatattctcc atggaacgga tagtttgttt tactctttta aggctgggct tggttttaat     240
atttttgctc tgacaagtta ttacttggga agttttttaa cacctttttac ttactttttt    300
aatgtaaaaa atatggcaga tgctttttat ctcttcactt taatcaaatt tggtctaata     360
ggtttatctg ctttttacag tcttgggcaa atttatacta aaatctctaa atcactcgtt     420
ttgatgctgt caacatctta tgctttaatg agctttacta gcagtcagtt agaattaaac     480
aattggttag atgtttttat cctgctacca cttattatgc ttggtttaca gcgtttagta     540
gaaaaaaggg ggatttttct ttatttttcta actcttactt gtttatttat tcaaaattac    600
tattttggtt tcatgacagc tattttctta actctttggt tttttacgca agtctcgtgg     660
gatattagaa acagaatgaa acgattaagt gattttgtgc tcgtatcaat ctttgcaacg     720
ctgacaagtg ctttatgct gcttccaaca tttcttgatt taaagagcca tggtgaagta      780
ttaacagaac aaattagtct attttcatca gacatttggt atttcgattt ttttgctaaa     840
agtcttcttg gtagttatga tacgacaaaa tatggctcta ttccaacgat ttatatcggt     900
ttacttccct tgatttttgc cattactttt ttctttgtta aatctataaa atggcaagtt     960
aaagtagctt atttctttt attggctatt attattgcaa gtttatctt tcaaccactt      1020
gatttatttt ggcaaggaat gcattcacct aatatgtttt tgcatcgtta ttcttgggct    1080
ttctccttag ttattgtcat aatggcagct gaaacgttaa ctcggataaa ggatataaaa    1140
ttgaaaaatt tttatccagc ctttaccttc ttgggagtag gacttttagc aactttttta    1200
ttcaaggact attataatta tctgacacaa gttaatttta tattaacaac tatcttttta    1260
gttagttatt ttattattct ttttactttt tttaatcaat tagtttctta taaagttatt    1320
atttccttta cacttatctt tacaagtttt gaaatagctt taaatacttt ttatcaaatt    1380
gaaggtattc aaactgactg gaatttccct tcaagagagg tttatgaaga taatgtaaag    1440
gaaattgaca actatgttaa gaaaactaaa aaagataact tagaattttt tcgaacagaa    1500
aaacaaattc cccaaactta caatgatggt atgaaattta attataatag catttctcag    1560
ttctcatctg tcaaaaataa cttatcagca caattattga attctctagg ctactattca    1620
caaggaaatc attctaccat tagttatcct aataatacta ttttgatgga tagtcttttt    1680
tcaattaaat acaatattaa taatcaaaat cctcataaat ttggattcca tttaaaacag    1740
aaaaacaata agctgcaact ttacaaaaac ttctattctc ttcctttagc acttatgtca    1800
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gttaatgaat tgacagatct aaatcttaca cttttcaaag aaatccctat tatttcaagt    1920
gtcggaatgc aagttttaga taatcgtgtt actattaatg gttcaaaagg aaataaggca    1980
caagtttact atactgtaaa gtgtcctgca aatagtcaac tttatatcag ccttcctaac    2040
ttgacagtta ataataaaga cgaaaatgtc tttataacaa ctaacaagca cacaagttct    2100
tatatcatag acgaaagtta ttatcttttt aatttaggaa attataaaaa aactcaaaca    2160
ttaatattta agcttagttt tccaaaaaat aaaacggtta gttatgattt accacatatt    2220
tatgctctcg atttaactgc ctatcaaaaa agtataaagc aattaaaaag tcaaactgtt    2280
aaaacaacaa ctaagaaaaa taaaattttt actacctatg ttgccaaaaa gagaacttcc    2340
ttgatttaca ctttaccata tgataaaggt tggtttgcta aacaaaatgg aaaagcaatt    2400
aaaatatcta aagcacaaaa tggactaatg aaaattgatg tttctaaagg tagtgggaag    2460
attataatga cttttgtgcc ccaaggacta tatcaaggaa ttcttcttac ctgtctaggt    2520
atctttctct ttgtatttta ccaactttat tacaaaaaat ttaatttaaa ataa          2574

<212> Type : DNA
<211> Length : 2574
      SequenceName : SEQ ID 601
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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actgcttgcg gatcaaaaac atctaaaaaa acagtaaccc ttgcgactgt tggaacaaca     120
aatccatttt cttatgagaa aaagggaaaa ttgacgggat atgatatcga agttgctaag     180
gaagttttca aagcttctga taaatacgat gtcaaatatc aaaaaacaga gtggaccagc     240
atttctctg gtctagatag tgacaaatat caaatcggag ctaacaatat cagttatact      300
aaagagcgtg ccaataaata tctttattct aatccaacgg cttccaatcc attggtatta     360
gtggttccaa aagatagtga tattaagtct tataacgata ttgctgggca tagcactcaa     420
gttgttcaag gaaatacaac agtgtctatg ctgcagaaat tcaataaaaa ccatgaaaac     480
aatcaagtta aactaaactt taccagtgaa gatcttgcgc atcaaatccg gaatgtcagt     540
```

```
gatggtaagt atgattttaa aatttttgaa aaaatttcag cagaaacgat catcaaagag      600
caaggacttg ataatttgaa agttattgat cttccttcag accaaaaacc atatgtttac      660
tttatttttg cgcaagacca aaaagactta caaaagtttg tcaataaacg tctcaaaaaa      720
ctttacgaga atggtacact tgaaaaatta tcgaaaaaat accttggagg aagctatctt      780
ccagataaaa aagatatgaa ataa                                             804
<212> Type : DNA
<211> Length : 804
      SequenceName : SEQ ID 602
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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gaacggattg attcaaatac agttgctgta aaccctgatt cgctcatttt aaagcgattt      120
ttaaaaacaa atcaattaaa tgggatcatg attgtgacgg ggccagatgg taaggctcaa      180
gtattttcaa atcaaagcaa ggtagatggc agtcctgttt caattaagga ttattttcct      240
cttgcttctt tacaaaaatt gataacaggg gtggctatcc aacaattaat tgataaagga      300
aaactgtctt taaacacacc tttaagcaaa tattatcctc aaattgaaaa tagtgaaaat      360
atcacgatac aaaatttact tacccacaca agcggtttgg cagatcgaaa agaagttcct      420
cagcaagtgc tgacaactca agagcagcaa ttggattttt cattgaccaa ttatcgcgta      480
acttatcgaa aaaaatggaa gtatgctaac attaattatg ctttgctagc tggcattatc      540
agtcaaatta gcggtcaaaa ttatgcgact tatgttcgtc aacacttctt aacagctggt      600
aaggggtggc attttaaaaa gtatattcaa ataaaagata agtccaagtt agctgccttg      660
tcagtgatgg atcaaagtac gacttgggat aagctgtcaa aagaagtgac atctaccttt      720
ggagctggtg attatgcttc taggccagtg gattattgga aatttatgat ggcttttatt      780
aatgaccaat ttgttcctgt cagcgaatac caacgttcta tgaaaatgac ttctaagagc      840
tattatggcg gcctctatat cagccaaaag atgctgcatg caaatggtgg tggctttgat      900
acttactctt gttttgctta ttcaaatcct aaaaccaaac aggtcatggt tttgtttatc      960
acaaacggta agtataaacg ggtcaaatcc ttagcagcta aagcctttaa actatatgca     1020
gattcgtatg cgctgaggaa aaatgaaacg tcaaaataa                            1059
<212> Type : DNA
<211> Length : 1059
      SequenceName : SEQ ID 603
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgaagaaaa aaatagctct agcagctctt tcttttgtca gtgcagctgt tcttgcagct       60
tgcagctcag cacctggtgg ttcatcagat gcagctggta ataaaattgg agatactgta      120
aaaattggtt acaatcttga attatcagga gatgtagccg cttatggaca agctgaaaag      180
aacggtgcta accttgctgt tgaagagatt aataaggcag gcggcattga tggcaaaaag      240
attaaagtta tctcaaaaga taataaatct gataacggtg aagcatcaac aatctcaact      300
aatcttgcta cccaaagtaa agtaaatgct atcttgggac cagcaacatc tggtgctaca      360
gcggctgctg ctcccaatgc caacgatgct gcagtaccac tcgtaacgcc ttctggaaca      420
caagataatt tgacctattc aaaaggcaaa gttcaagatt acatcttccg tacaactttt      480
caagatagct tccaaggaaa gatcattgcc aaatatgcaa cagataattt gaaagctaaa      540
aaagtagcgc tttactatga taagtcaagt gattacgccc aaggtattgc tgatgcattc      600
aaaaaagcat ataaagggaa gattactgtt gaagatacct ttcaagctaa agaccaagat      660
ttccaagcag ctctgaccaa gtttaaaaat aaagactttg atgccattgt gataccaggt      720
tattatactg aaactggtct gattacaaag caagcacgtg atatggggct tacccagcct      780
atcttaggac ctgatggttt taatgatgaa aaatatgttg aaggtgctgg tgcagccaat      840
accaataatg ttcattatgt atctggttac tcaacaaaag ttgctttaac aaataaggct      900
gaaaaattcc tgaaagatta taaggctaag tatggtgaag agccaaatat gtttgccgct      960
cttgcttatg attccgttta tatgattgct gatgctgcaa aagatgccaa aacatctaag     1020
gatattgcaa caaacctagc taaattgaaa aactttaaag gtgtgacagg taaaatgaca     1080
attgataaga aacataaccc tgttaaatca gccgttatgg ttggtcttaa agatggtaaa     1140
gaagacacag ctactgctgt tgaagcaaaa taa                                  1173
<212> Type : DNA
<211> Length : 1173
      SequenceName : SEQ ID 604
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
atgaagaaat taagcttatt attactagtt tgtttatctt tattaggctt atttgcctgt      60
acttctaaaa aaacagccga caaaaaattg actgttgtgg ctaccaattc tattattgct     120
gatattacta agaatatcgc tggtaataag gttgtcttac atagtatcgt tcctgttggt     180
cgagatcctc acgaatatga gcctcttcct gaagatgtta aaaagacctc tcaggctgat     240
gtcatttttt ataatgggat taatcttgaa aatggaggca atgcttggtt taccaaacta     300
gttaaaaatg ctcataaaaa gacagacaag gattattttg cagtgagcga tagtgttaag     360
accatttatt tggaaaatgc aaaagaaaaa ggaaaggaag atcctcatgc ttggcttgac     420
cttaaaaatg gtattattta tgctaaaaat atcatgaaac gtctatctga aaaagatcct     480
aaaaacaaga gttattatca gaaaaatttt caagcctaca gcgccaaact tgaaaaacta     540
cacaaagtag ccaaagaaaa aatcagtcgt atccctactg agaagaaaat gatcgtaact     600
agtgaaggtt gtttcaagta tttctctaag gcttacgata ttccttctgc ctatatatgg     660
gaaattaata ccgaagaaga gggaacacca aatcaaatta aggctttagt gaaaaaatta     720
aggaaaagtc gggtgtctgc gctttttgta gaaagcagtg ttgatgatcg tccaatgaaa     780
actgtttcaa aagatacagg tatcccaatt gccgctaaaa tttttacaga ttcagttgct     840
aaaaaaggac aggctggaga tagttactat gcgatgatga agtggaatat agataaaatt     900
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<212> Type : DNA
<211> Length : 921
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      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
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ggtggtacag ctgagtctca tgatgtggaa gcgacgacag gggcgttaa gctttcagct      180
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<212> Type : DNA
<211> Length : 1098
      SequenceName : SEQ ID 606
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
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atcacaaaat cagatggtac agcactttct aatgatccat ctaaggctgt taattattgg     180
gaaccacttt ctttcagtaa ttctattact ttcccagatg aagtcagtat taaggctggg     240
gatactttaa ccattaagtt gccagagcaa ttacaattta cgactgctct aactttcgat     300
gttatgcata ccaatgggca attagctggt aaagcaacaa ctgatcctaa tacaggagaa     360
gtaacagtta cctttactga tatttttgaa aaactgccta atgataaggc tatgacatta     420
aattttaatg cacaattgaa tcataacaat atttctattc ctggtgttgt aaactttaac     480
tataataatg ttgcttatag ctcttatgtt aaagacaaag atattacgcc aataagtcca     540
gatgttaaca aagtgggtta tcaggataaa agtaatcctg gtttgattca ctggaaagtt     600
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gttttaccat caacaggtga acaagcaggg cttttgttaa ctactgtagg tcttgtaatt    1320
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<212> Type : DNA
<211> Length : 1362
      SequenceName : SEQ ID 607
      SequenceDescription :

Sequence
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gttgttgctg ttagtccgga ctatgctcct tttgagttca aggctcttgt gaacggtaag     180
gatactgttg ttggtgctga tattgatttg gcaaaagcaa ttgctaaaga attgggagtg     240
aaactggaat tatcttccat gagttttgat aatgtcttgt ccagtttaaa aacaggaaaa     300
gcagacatag ctatctctgg tttatcttat accaaggaac gtgctcaagc ctatgacttt     360
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gaagaaggat tagctaaaaa tcaattaaaa caatcaaaca ttacctcttt gacttcgatg     540
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<212> Type : DNA
<211> Length : 816
      SequenceName : SEQ ID 608
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
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cttaaaattg ctactgcagg aacgctttat ccgcaatctt atcatgatga tcataataaa     180
ttgacgggtt atgatgttga aattctaaaa gaaataggaa aacgtttggg attgaaagtt     240
cagtttactg aaatgggtgt cgatggtatg ctgacagcca tcaagagcgg tcagatcgat     300
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ccctataaat attcttttac gtcaatggtt gtccgctcta aagatgattc aggtattcat     420
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atagctgttg cagcagtcaa agacaaatac gctatcaaaa taaaccaagg actttatgcc     660
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aataaggctg tgaaagacat gcgcaaggat ggcaccctaa ccaagctatc taagaagttt     780
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<212> Type : DNA
<211> Length : 852
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      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pneumoniae R6
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<400> PreSequenceString :
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tactattatt ttgatccttt atccggagag atggttgtcg gctggcaata tatacctgct 240
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agattgacgg ttggagagct agcacgtggt tgggttaagg attaccctct tacgtatgat 600
gaagagaagc taaaagcagc tccatggtac tatctagatc cagcaactgg ctggcaaaac 660
cttgggaaca aatggtacta tctccgttca tcaggagcta tggcaactgg ttggtatcag 720
gaaggttcga cttggtacta tctaaatgca agtaatggag atatgaaaac aggctggttc 780
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<212> Type : DNA
<211> Length : 885
SequenceName : SEQ ID 610
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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tactattttg gtgatattgg agagatggtt gtcggttggc aatacttaga aattcctgga 240
acaggttatc gtgataattt attcgataac caaccagtta atgaaattgg ccttcaggag 300
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<212> Type : DNA
<211> Length : 1017
SequenceName : SEQ ID 611
SequenceDescription :

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<213> OrganismName : Streptococcus pneumoniae R6
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cttgcagtca acacaactgt agatggctat aaagtcaatg ccaatggtga atgggtttaa    1860

<212> Type : DNA
<211> Length : 1860
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<212> Type : DNA
<211> Length : 1347
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      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pneumoniae R6
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<212> Type : DNA
<211> Length : 2106
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      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pneumoniae R6
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gctaaaccta aaaagaattc taatcaggga gtagttggtt gggttaaaga caaaggttta   1440
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<211> Length : 2073
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      SequenceDescription :

Sequence
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tatcactggc ggaaagaccc agaattaggt tttttctcgc acattgttgg gaacggttgc     180
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gactaccgcc tttatatcga actcttacgc aatctagcag atgaagcagg tttgccgaaa     360
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aatgccttta tccagtcagc ggacggaaca ggctggtact acctcaaacc agacggaaca     900
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<212> Type : DNA
<211> Length : 957
      SequenceName : SEQ ID 616
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
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gcgcgcacgc aaggcacagc cgcccgtgcc cacgccgcgc agcaaaacgg ttttgaagcc     180
tttgcaccgt ttgcagccgc cgttttgacg gcacacgcaa ccggcaatgc cggacaagca     240
accgtcaaca cgcttgccgg cctgttcatc ctgttccgcc tcgcctttat ctggtgctac     300
atcgcagaca aagcagcatt acgctcgctg atgtgggtgg gcggatttgt ctgcaccgtc     360
gggctgtttg tcgtggctgc ttga                                            384
<212> Type : DNA
<211> Length : 384
      SequenceName : SEQ ID 617
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
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acactgttgt ttgcaacggt tcaggcgaat gctaccgatg aagatgaaga agaagagtta     180
gaatccgtac aacgctctgt cgtagggagc attcaagcca gtatggaagg cagcggcgaa     240
ttggaaacga tatcattatc aatgactaac gacagcaagg aatttgtaga cccatacata     300
gtagttaccc tcaaagccgg cgacaacctg aaaatcaaac aaaacaccaa tgaaaacacc     360
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<212> Type : DNA
<211> Length : 1779
      SequenceName : SEQ ID 618
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
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tggcccagca acaacagtga tgccggcgtg gcatccaccg ccaccgacat caaaggaaaa      120
tatgttaaag aagttaaagt cgaaaaaggc gtcattaccg ccacaatgct ttcaagcggc      180
gtaaacaacg aaatcaaagg caaaaaactc tccctgtggg ccaagcgtca agccggttcg      240
gtaaaatggt tctgcggaca gccggttgag cgcgccgcca acaacgccgc caacgacgcc      300
gtcaccgccg ccaccgccaa cggcaacggc aagatcgaca ccaaacacct gccgtcaacc      360
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<212> Type : DNA
<211> Length : 426
      SequenceName : SEQ ID 619
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
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gtcggcaaat caatgacaaa agccccgatg attgattttt ctgtggtgtc gcgtaacggc      300
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<212> Type : DNA
<211> Length : 4350
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      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
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ggttcggtaa aatggttctg cggacagccg gttaagcgca acgacaccgc caccaccaac     420
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<212> Type : DNA
<211> Length : 513
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Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
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ggaccgtata aagtaagcaa aggaattaaa ccgacagaag gattaatggt cgatttctcc   840
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<212> Type : DNA
<211> Length : 963
      SequenceName : SEQ ID 622
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
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<212> Type : DNA
<211> Length : 423
      SequenceName : SEQ ID 623
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
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cgcgccgccg aacaaacagg caacgccgtc gaaaaaggct gggacaaaac caaagaagcc   180
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<212> Type : DNA
<211> Length : 255
      SequenceName : SEQ ID 624
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 372
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      SequenceDescription :

Sequence
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gaatggccga aaaacttcgt cattcccgcg caggcgggaa tccaggtctg tcggcacgga     300
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tga                                                                   363
<212> Type : DNA
<211> Length : 363
      SequenceName : SEQ ID 626
      SequenceDescription :

Sequence
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aacaacgaaa tcaaaggcaa aaaactctcc ctgtgggcca agcgtcaaga cggttcggta     240
aaatggttct gcggacagcc ggttaagcgc aacgacaccg ccaccaccaa cgacgacgtc     300
aaagccgaca ccgccgccaa cggcaagcag atcgacacca agcacctgcc gtcaacagca     360
tcgacaagaa aatcgacacc aaactag                                         387
<212> Type : DNA
<211> Length : 387
      SequenceName : SEQ ID 627
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
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acgcacaaaa cccaaaaact cggcgaagaa aaaatccgcc gcaaaacttt agacaagctc     180
ttggtcaacg acgaacacga cctggtgcgc tacgaccccg gcatttccgt cgtcgaaggc     240
ggcagggcgg gttctaacgg ctttaccata cgcggcgtgg acaaagaccg cgtcgccatc     300
aacgttgacg ggctggcgca ggcggaaagc cgctcttccg aagccttcca agaattgttc     360
ggcgcgtacg gcaacttcaa cgccaaccgc aacacttccg agccggaaaa cttttccgaa     420
gtaaccatca ccaaaggcgc ggactcgctc aaatccggca gcggcgcatt gggcggcgca     480
gtcaattacc aaaccaaatc cgcaagcgat tatgtttccg aagacaagcc ctaccatttg     540
gggataaagg gcggcagcgt cggcaaaaac agccaaaaat tcagcagcat caccgccgcc     600
ggcaggctct ttggtttgga tgccttattg gtttataccc gccgcttcgg caaagaaacc     660
aaaaaccgct cgaccgaggg cgatatcgaa attaaaaacg acggatatgt ctataacccg     720
accgatacag gcggacccag caagtacctg acctatgtag ccacaggggt tgcgcgctcc     780
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aacgatcaaa accgtatcgg ctggattttt gaagactcgc gcaccgaccg ttttaccaac     900
gagctgtcta atttgtggac gggtacgacc acgtctgccg caacgggcga ctaccgccac     960
cgccaagacg tgagctaccg ccgccgctcc ggtgtcgaat acaaaaacga attggaacac    1020
ggcccgtggg acagccttaa gctgcgctac gacaagcagc gcatcgatat gaacacttgg    1080
acttgggaca tcccgaaaaa ttacgataaa agaggcatca acggcgaggt ttaccattcg    1140
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ttccggcata tccgccaaaa caccgcgcaa tggactgccg attttgaaaa acaactcgac    1200
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gcgtttcact tgggcggcaa cgaccgcttc cgcctgaatg cgggcatacg ctacgacaaa    1440
aacagcagca gcgcgaaaga cgatccgaaa tacaccaccg ccatccgggg gcagattccc    1500
catttgggtt cggaacgcgc gcacgcgggc ttcagctacg gcacggggtt cgactggcgg    1560
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gacgaaactt ggctactgtt cccacacccc gatttctacc tgaaagccaa cccaaacctg    1680
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gtttcgtcag acgataaaaa caaccccaga tacgccccgc tttcagacgg tacggcattg    1860
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aacgtcagct acatcaaggg caaggcaacg caaaacaacg gcaaagaaac gcccatcaac    2040
gcgctttcgc cgtggacggc ggtttacagc ctgggctatg acgcgccttc caaacgctgg    2100
ggcatcaacg cctacgccac gcgcaccgcc gccaaaaagc cgtccgacac cgtccacagc    2160
aacgacgact tgaacaaccc gtggccttat gccaaacaca gcaaggccta tacgctgttc    2220
gacctttccg cctacctcaa catcggcaaa caggttacgc tccgcgccgc cgcgtacaac    2280
attaccaaca agcagtacta cacttgggaa tctttacgca gcatccgcga gttcggcacg    2340
gtcaaccgcg ttgacaacaa aacccacgcc ggcatccaac gctttacctc gccgggcagg    2400
agctacaatt tcaccatcga agcgaagttc taa                                 2433
<212> Type : DNA
<211> Length : 2433
      SequenceName : SEQ ID 628
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
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gttaccctgt acggcaccat caaaaccggc gtagaaactt cccgctctgt agaacacaat     120
ggaggtcagg tggttagcgt tgaaaccggt accggcatcg ttgatttggg ttcgaaaatc     180
ggcttcaaag gccaagaaga cctcggtaac ggcctgaaag ccatttggca ggttgagcaa     240
aaggcatcta tcgccggcac tgactccggt tggggcaacc gccaatcctt catcggcttg     300
aaaggcggct tcggtaaatt gcgcgtcggc cgtttgaaca gcgtcctgaa agacaccggc     360
gacatcaatc cttgggatag caaaagcgac tatttgggtg taaacaaaat tgccgaaccc     420
gaagcacgcc tcatttccgt acgctacgat tctcccgaat ttgccggcct cagcggcagc     480
gtacaatacg cgcttaacga caatgtaggc agacataaca gcgaatctta ccacgccggc     540
ttcaactaca aaaacggcgg cttcttcgtg caatatggcg gtgcctataa aagacatcag     600
gatgtggatg acgtgaagat tgagaaatac cagattcacc gtttggtcag cggttacgac     660
aatgatgccc tatacgcttc cgtagccgta cagcaacaag acgcgaaact ggttgaagac     720
aattcgcaca actctcaaac cgaagttgcc gctaccttgg cataccgctt cggcaacgta     780
acgccccgcg tttcttacgc ccacggcttc aaaggctcgg ttgatgatgc aaaacgcgac     840
aatacttacg accaagtggt tgtcggtgcg gaatacgact tctccaaacg cacttctgcc     900
ttggtttctg ccggttggtt gcaagaaggc aaaggcgaaa acaaattcgt agcgactgcc     960
ggcggtgtcg gtctgcgcca caaattctaa                                      990
<212> Type : DNA
<211> Length : 990
      SequenceName : SEQ ID 629
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
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tcccgcgccg ccgtcaaaga aatggacttg tccgccctga aaggacgcaa agccgccctt     180
tacgtctccg ttatgggcga ccaaggttcg ggcaacataa gcggcggacg ctactctatc     240
gacgcactga tacgcggcgg ctaccacaac aaccccgaaa gtgccaccca atacagctac     300
cccgcctacg acactaccgc caccaccaaa tccgacgcgc tctccagcgt aaccacttcc     360
acatcgcttt tgaacgcccc cgccgccgcc ctgacgaaaa acagcggacg caaaggcgaa     420
cgctccgccg gactgtccgt caacggcacg ggcgactacc gcaacgaaac cctgctcgcc     480
aacccccgcg acgtttcctt cctgaccaac ctcatccaaa ccgtcttcta cctgcgcggc     540
atcgaagtcg taccgcccga atacgccgac accgacgtat tcgtaaccgt cgacgtattc     600
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ggcaccgtcc gcagccgcac cgaactgcac ctctacaacg ccgaaaccct taaagcccaa      660
accaagctcg aatatttcgc cgttgaccgc gacagccgga aactgctgat tgcccctaaa      720
accgccgcct acgaatccca ataccaagaa caatacgccc tctggatggg accttacagc      780
gtcggcaaaa ccgtcaaagc ctcagaccgc ctgatggtcg atttctccga catcaccccc      840
tacggcgaca caaccgccca aaaccgtccc gacttcaaac aaaacaacgg taaaaaaccc      900
gatgtcggca acgaagtcat ccgccgccgc aaaggaggat aa                         942
<212> Type : DNA
<211> Length : 942
      SequenceName : SEQ ID 630
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
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ggcggtaaca cattcggcag cttagacggc ggcacaggta tgggcggcag catcgtcaaa      120
atggcggtag aaagccaatg ccgtgcggaa ttgaacaaac gcagcgaatg gcgtttgacc      180
gcgctggcga tgagtgccga aaaacaggcg gaatgggaaa acaagatttg cgcttgcgtc      240
gcccaagaag cacccaacca gctgaccggc aacgatgtga tgcagatgct ggatccgtcc      300
acgcgcaatc aggcacttgc cgccctgacc gccaaaacgg tttccgcctg cttcaaacac      360
ctgtaccgct aa                                                          372
<212> Type : DNA
<211> Length : 372
      SequenceName : SEQ ID 631
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
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gtactgctgg ctttttcaac cgctgccttt gccgggggcg cattcacgct gcaattcgac      120
aacccgtccg aagacggcgg cttcacgcaa aaccagattt tgagcgcgcc ttacggcttt      180
ggctgttcgg gcggcaatgc ttcgcccgcg ctgtcgtgga aaaatccgcc cgccgggaca      240
aaaagtttcg tcctgaccgt ttacgataaa gacgcgccga ccggactggg ctggatgcac      300
tgggtggtcg ccgacattcc cgccgatgtc cgccgccgca atgcgacctc gctgcaatta      360
agccgctgcg ccagcatcgc cgacgaccag tccgcagcca tatcggcagt aatcagtttg      420
cagatttgcc gcatcaggtt gacgccttcg tacacggcaa aaccgatgcc gtcatgctgc      480
aaccacgcca acacgccgca aagcgcggcc tccgccgcat tgtgcggcac ttcttcatcc      540
gtcagcaccg ccgccgcata a                                                561
<212> Type : DNA
<211> Length : 561
      SequenceName : SEQ ID 632
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :
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atgttttccc ataccggcgg gggggggggg gcgatggcgc aaacccgtca atacgctatt      120
atcatgaacg agagaaacca gcccgaggta cagtggaatg ggtcatattc aataaaggac      180
aaagacagga agcgcgaata tactcatcat aatcaccaac aaggaggaag ctctgtctca      240
ttcaacaata gcgatgagct tgtttctcga caaagcggta ctgccgtttt tggcacagcc      300
acctacctgc cgccctacgg caaggtttcc ggttttgatg ccgccgctct gaaagagcgc      360
aacaatgccg tcgattggat tcataccacc cacccagggt tgataggcta cagctacgac      420
ggtgtcgtat gcagaagcgc cacagactgt cccaaacttg tctataaaac ccgattttcc      480
ttcgataatc ccgacttggc aaaaacagga ggcgggttgg ataagcacac agagccaagc      540
cgcgacaatt cgcccattta caaattgaag gatcatccat ggttgggcgt gtctttcaat      600
ttgggtgccg agggtatcgc caaaaatggt aagacaatca acaaattggt atcttctttt      660
aatgaaaaga atagtaataa caacctcgtc tataccacgg aaggccgcga tatttccttg      720
ggcaactggc agcgcgaaac gaccgccatg gcctattatc tgaacgccaa gctgcacctg      780
ctggataaaa aacagattca aaatatcacc gacaaaacag tgcagttggg tgtcttgaag      840
ccgagcatcg atgtgcggac aagaaatacg gggactgccg gcattctatc ttattgggct      900
aagtgggaca ttaaagatac cgggcagatt ccagtcaagc tcagcttgac gcaagtcaaa      960
gcaggccgct gcgtcaacaa agataacccc aataagaata ccaaaacctc ttcccccgca     1020
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ctgactgccc ccgcgctgtg gttcggagct gggcaagatg gtaaggcgga gatgtattcc   1080
gcttcggttt ccacctaccc cgacagttcg agcagccgca tcttccttca aaatctgaaa   1140
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ggcaaaaacg acactttcgg cattgttagt gaagggagct tcatgcctga tgccagcgag   1380
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acagtcaaca aagaagaaaa caacggcaag ccaaaataca gtcaaaaata ccgcagccgc   1500
aacaacggca agcacgagcg caatttgggc gacatcgtca acagccccat cgtggcggtc   1560
ggcgagtatt tggctacttc cgccaacgac gggatggtgc atatcttcaa acaaagcggc   1620
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gatattgaaa gcaaagactc caccettgcc aaagagctgc gcgcctttgc cgaaaaaggc   1740
tatgtgggcg accgctacgg cgtggacggc ggctttgtct tgcgccgcat tacagatgac   1800
caagacaagc aaaaacactt ctttatgttc ggcgcaatgg gccttggcgg cagaggcgca   1860
tacgccttgg atttgaccaa agccgacgac aatgacccga caaaagcctc tttgtttgat   1920
gtaaaagata acggcaataa tggcaataac ggcaataatc gcgtggaatt aggctacacc   1980
gtcggcacgc cgcaaatcgg caaaacccac aacggcaaat acgccgcctt cctcgcctcc   2040
ggttatgcga ctaaacagat tgacagcggc gagaataaaa ccgcgctgta tgtgtatgat   2100
ttggaaagca acaacggtac gctgattaga aaaatcgaag taaccgacgg caagggcggg   2160
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ttgaaggacg gacagcgcgt taccgtcaaa ccgaccgtgg tattgcgtac cgcctttgta   2640
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aataccgccg acggcggcaa gctgaccaag aaaagcgcgc gcccgattgt gccggcagcc   2760
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ccggttaatg tgcgctacct ggacgaaaag aaaacagacg gattttcaac aacggcagac   2940
ggcgatgcgg gcggcagcgg aacattcaaa gagggtaaaa aacccgcccg caataaccgg   3000
tgcttctccg gaaaaggggt gcgcaccctg ctgatgaacg atttggacag cttggatatt   3060
accggcccga tgtgcggtat gaaacgaatc agctggcgtg aagtcttcta ctga         3114
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<212> Type : DNA
<211> Length : 3114
SequenceName : SEQ ID 633
SequenceDescription :

Sequence

<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
<400> PreSequenceString :

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cccctgccgg ttgtaaccag cttcagcatt ttaggcgacg tagccaaaca aatcggcgga    120
gagcgcgtat ccatacaaag tttggtcgga gccaaccaag atacgcacgc ctatcatatg    180
accagcggcg acattaaaaa aatccgcagt gcaaaactcg tcctgattaa cggcttagga    240
cttgaagctg ccgacatcca acgtgccgtc aaacagagca aagtatccta tgccgaagcg    300
accaaaggca tccaaccccct caaagccgaa gaagaaggcg gacaccatca cgaccacgat    360
catgaccacg accatgacca cgaaggacac caccacgacc acggcgaata tgaccccccac    420
gtctggaacg accccgtcct tatgtccgcc tatgcccaaa acgtcgccga agccctgata    480
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aaagtcctga ccgggcacga tgccttttcc tatatgggca aacgttacca tatcgaattc    660
atcgccccac aaggtgtgag cagcgaagcc gagccttcag ccaaacaagt cgccgccatc    720
atccgacaaa tcaaacgcga aggcatcaaa gccgtattta ccgaaaatat caaagacacc    780
cgcatggttg accgcatcgc caaagaaacc ggtgtcaacg tcagcggcaa actgtattcc    840
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<212> Type : DNA
<211> Length : 927
SequenceName : SEQ ID 634
SequenceDescription :

Sequence

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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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ctgactacag agcaaaaagc tgcacagaat caagtttcag cgttacaggc tcaagtaagt     180
tcactacaat ctgaacaaga taaactgacc gcaagaaata cagaacttga ggcactttca     240
aagcgatttg agcaagaaat taaggctcta acaagtcaaa ttgttgctcg taatgaaaaa     300
ttaaaaaatc aagctcgtag tgcttataaa aacaatgaaa cttctggtta cattaatgca     360
cttttgaatt ctaaatcaat ttctgatgtt gtaaaccgtt tagtagcaat taatagagct     420
gtctctgcta acgctaaatt gttagaacaa caaaaagctg ataaagtttc ccttgaagaa     480
aagcaagctg ctaaccaaac agctattaat accattgccg ctaatatggc aatggctgaa     540
gaaaaccaaa atacattacg tactcaacaa gctaatttgg aagctgcaac tgcaaattta     600
gctctccaat tagcatctgc tactgaagat aaagctaatt tggtagctca aaaagaagct     660
gcagaaaaag ctgctgctga agccttagca caagaacagg ctgctaaagt taaggcacaa     720
gaacaggctg cacaacaagc agcatctgtt gaagcagcaa aatctgctat tactccagca     780
ccacaagcta ctccggcagc gcaaagtagt aatgctattg aaccagctgc actcacggct     840
ccggcagctc cttctgcaag accacaaaca tcatatgatt cttctaatac ttatccagtt     900
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gttcaaagtg cctcaagtat tcgtgtgatg gagtctaact acagtggtag acagtacatt    1140
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<212> Type : DNA
<211> Length : 1197
      SequenceName : SEQ ID 635
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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agtgctccga aactgtcaga agcccagtta aaatcaacaa actctagctt ggtttatgac     180
ggtaataaca atctgattgc tgatttgggt tctgaaaagc gtgaaaatgt aacagctgat     240
agtatcccta ttaatctagt taatgctatt acctcaattg aagataaacg tttctttaac     300
catcgtggag tagatcttta tcgtattttt ggtgctgcct ttcataatct aacgagtcag     360
accactcaag gggggtcaac gcttgatcag caactcatta aactagccta tttttctact     420
aatgaatctg atcaaacctt aaaacgtaag gctcaagaag tttggcttgc tcttcaaatg     480
gagcgaaaat atactaaaca agaaatcctg actttttaca tcaacaaagt atatatgggt     540
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gtttatacca atattatccc cgatgcgcag cagactcttt ataatattta tcattctggt     960
gattatgttt actatccaga ccaagatttc caagttgctt caacgattgt tgatgtgaca    1020
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actaaccaag ctgttttaac tgatcgtgac tggggttcta ccatgaagcc aatcacagcc    1140
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gaaatgcact actcaaacgc tatctcaagt aataacagta gctcagataa aaaatatggt    1440
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aaaccaaggt atgtcaataa agtggaattt agtgatggta caagtaaaac atttgatgaa    1560
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tacgccatgg ctgtttggac aggttacaaa aaccgcttga ccccagtata cggatcaagt    1860
ctagagattg catctgacgt ttatcgtagc atgatgactt acttaacaaa tggttacagt    1920
gaagactgga ccatgccaaa tggtctttat cgcagtggtg gattcctcta cttaagcgga    1980
acctatgcga gcaacaccga ctatactaat tcggtttaca acaatcttta cagcaataac    2040
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acaacaacag cttctagcca aacgacttca gatgatacta gtagtagcaa tgatacaagt   2100
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<212> Type : DNA
<211> Length : 2166
      SequenceName : SEQ ID 636
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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gtcctagttg ataatgtttt tacttatact gtaaaatacg gtgacacttt aagcacaatt    180
gctgaagcaa tgggaattga tgtgcatgtc ttaggagata ttaatcatat tgctaatatt    240
gacttaattt ttccagacac gatcctaaca gcaaactaca accaacacgg tcaggcaacg    300
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gcaagtattt acggaccagc ctatacatgg aaccccatgc cagatcgcgg cagtattaca   1140
gaaaaccatt atgatcatgt tcatgtctcc tttaatgctt aa                      1182
<212> Type : DNA
<211> Length : 1182
      SequenceName : SEQ ID 637
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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gtttatgaat ttacaaaagg ggttattggt aatgatggcg atgtttccat gcttatgaaa    180
gcaggaacgg aacctcatga ttttgagcct tctacaaaag acattaaaaa aatccaagat    240
gcagatgcat ttgtttatat ggatgacaat atggaaactt gggtttctga tgtgaaaaaa    300
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ggagctggac atgaccatca ccatgaggat gctgacaaaa agcatgagca taataaacat    420
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acggcagcac tttcagatgc taagcaaaag agctttgtga cacaacacgc agcttttggt    660
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gtggctggta aagaaattct tccagaaaaa gacacgacta agacagttta caatggttat   1020
ttcaaagaca aagaagtcaa agatcgtcaa ttatctgact ggtcaggtag ctggcaatct   1080
gtttacccct atttacaaga tggtacttta gaccaagttt gggactataa ggctaaaaaa   1140
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gacgtggaac aaatcaaaat caatggtaag aaaaagacca tgacctttgt tcgtaatggt   1260
gaaaagaaaa ccttcactta cacatacgcc ggcaaagaaa tcttgaccta tccaaaagga   1320
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<212> Type : DNA
<211> Length : 1548
      SequenceName : SEQ ID 638
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
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ttaggcgata actatccgag taagtggaaa aaaggcaatg gaatcgattc gtggaacatg     180
tatatccgcc aatgcacttc ttttgcagct tttcgtttaa gctctgctaa tggttttcag     240
ttacctaaag gctacggtaa tgcctgcacg tggggacata tcgcgaaaaa tcagggttat     300
cctgtgaata agacaccaag catagggggct atcgcttggt ttgataaaaa cgcttatcag     360
tcaaatgctg cttacgatca tgtagcatgg gtagctgata tccgtggaga cactgtcact     420
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ccaaaatctc aggtaagtgg ttatatccat tttaaagact tatcatctca gacaagtcat     540
tcctacccaa gacaactaaa acacatttct caagcttcat ttgacccctc tggaacttat     600
cactttacaa ccagattacc agtcaaagga caaaccagta tcgatagccc tgatcttgct     660
tactatgaag caggtcaatc tgtttattac gataaagtcg tgactgctgg aggttataca     720
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cagtctgtgg ttcaaaatga caatacaaaa ccttccatta aggtcggtga tactgttacc     840
ttccctggcg tttttcgtgt agatcagctt gttaataatt tgatcgttaa taaagaatta     900
gccggaggag acccaactcc actaaactgg attgatccca caccattaga tgaaacagat     960
aaccaaggaa aagtttttagg aaatcaaatt ctccgtgtgg gtgaatattt taccgtcact    1020
ggtagttata aagtattaaa aattgatcaa ccaagtaatg gtatttatgt tcaaatcgga    1080
tctcgtggaa catgggtaaa tgctgataaa gctaacaaat tatag                     1125
<212> Type : DNA
<211> Length : 1125
      SequenceName : SEQ ID 639
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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cctggaggct gctgttgctg ctgtactact tgttgcttct caattgctac tggaagtggt     120
aattctcaag gtggtagcgg aagttatacg ccaggtaaat aa                        162
<212> Type : DNA
<211> Length : 162
      SequenceName : SEQ ID 640
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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tcggtgtctc aaaaagctag ttccatgttt aaatccatgt taggagcgaa tttagctgga     180
caagctatct cggcaatgac aaggacagtg tcatcaggcc ttggctctat gcttggcgag     240
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ggaaaaaaac aaattttggc agttaaaacg gcgatgcaag actatgcaac taaaacaatc     360
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accggaaagc tcgtaaaagc ttttggcggt ttagctgcat ctgctgaaaa tccgaagcag     480
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caagacttta ggataatgtt ggaacagacg cctgcaggga tggctaaagt cgctaaatct     600
atgggtaaaa atcttgatga actcgtcgcc gatatccagg cgggtagggt taaaaccagc     660
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gagttcaaaa ctgttgacca agccatcgac ggtatgcgag aaggcttatc caacaaattg     780
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gttaaagaat tttgggacgg tttcaaacaa actggagcaa ttagtgcttt ttcaggagct    1020
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<212> Type : DNA
<211> Length : 1488
      SequenceName : SEQ ID 641
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
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ccaatgtatg cgatgacaaa agaagtatct ggagacctaa atgatgtgag gatgatccaa     180
tcaggtgcag gcattcattc ctttgaaccg tctgtaaatg atgtagcagc tatttatgac     240
gcggatttgt ttgtttacca ttcacatacc ttagaagctt gggcaaggga tctagaccct     300
aatttaaaaa aatcaaaggt tgatgtgttt gaagcgtcaa aacctttgac actagataga     360
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caagactttg tcaaagaata caacgtcaag actatttttg cagaagacaa tgtcaatccc     780
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<212> Type : DNA
<211> Length : 921
      SequenceName : SEQ ID 642
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
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agtgaaccaa caatcacgaa tcacactcaa caacaagcgc aacatctcac caatacagag     180
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gaaaaagagc aaccacaagg tctagtctct gagccaacca caactgagct agctgacaca     300
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ccagtcaata cagatgttca cgattgggta aaaaccaaag gagcttggga caagggatac     420
aaaggacaag gcaaggttgt cgcagttatt gacacaggga tcgatccggc ccatcaaagc     480
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caaaaagccg ccggtattaa ttatgggagt tggataaatg ataaagttgt ttttgcacat     600
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tatcgtcccc aatcaaccca ggcaccgaaa gaaactgtta tcaaaacaga agaaacagat     780
ggttcacatg atattgactg gacacaaaca gacgatgaca ccaaatacga gtcacacggt     840
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<212> Type : DNA
<211> Length : 4944
SequenceName : SEQ ID 643
SequenceDescription :

Sequence

<213> OrganismName : Treponema pallidum subsp. pallidum str. Nichols
<400> PreSequenceString :

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SequenceDescription :

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<213> OrganismName : Treponema pallidum subsp. pallidum str. Nichols
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<212> Type : DNA
<211> Length : 2277
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      SequenceDescription :

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<212> Type : DNA
<211> Length : 1797
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      SequenceDescription :

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<212> Type : DNA
<211> Length : 1797
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      SequenceDescription :

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accaccctgg acgcctccgg caactggagc gtcggcgttc cggcggcgga tgtcacggcg   4320
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<212> Type : DNA
<211> Length : 4386
      SequenceName : SEQ ID 662
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
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acaacgaaat tcagtagatt gacgctgggt gttttgctgg cactaagcgg ttcagtgtct     180
ggtgcgagtc tggaagttga taatggtcag attaccaata ttgatactga tgttgcttat     240
gatgcctacc tggttggctg gtatggcact ggagtgctta atattttggc tggcggtaat     300
gcctccttaa ccactattac taccagcgtc attggcggta atgaggattc ggagggtacc     360
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ggctatttaa gattaggtac tcaagctgca ggcgtcggga cggttaatgt tgagggagag     540
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agcggtgtga tgtcgggaaa tgtcaccact gcaggtgatg tgaacgttat gtctgggggg    3960
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cggttcaaat ga                                                        4032
<212> Type : DNA
<211> Length : 4032
      SequenceName : SEQ ID 663
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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tcccccctgc tgatagctgc tgatacagga agtcaatatg gcaccaatat tactattaat     180
gatggtgaca gaattactgg agataccgcc gatccatcag gaaacctcta tggtgtaatg     240
accccagcag gaaacacgcc tggcaatatc aacctgggta atgatgtcac cgtcaatgtc     300
aacgacgcct ctggatatgc aaaaggaatc attattcagg gcaaaaacag ctccctgaca     360
gctaaccgac tcacagtaga tgttgttggt caaacctctg ccatcggcat taatttaatt     420
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ggtataggcc taaccatcaa tgactatggc accagtgtcg atcttggaag cggaagtaaa     600
atcaagaccg atggaagtac aggtgtttat atcggtggtc tcaacggcaa taacgccaat     660
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gcgacaatca atttttctgg cacggcagcg caacgaaaca gcatcttttc cggcggttct    1020
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cattcaactg tcgattttgc cagccacggg tcaactgccg gcacatttac cacattaaac    1560
gtagagaacc tgagcggtaa cagtaccttt attatgcgtg ctgatgttgt tggcgagggt    1620
aatggcgtta agccctgggc ctga                                           1644
<212> Type : DNA
<211> Length : 1644
      SequenceName : SEQ ID 664
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
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tctctgggcg gctatgccag ttgggaacat gaaagtggtt tctatctgga cggtgtcgtg     180
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tcattcagca gtacgttaag cgggcatctt ggggtggggt atagcaacgg tgctggtatg     660
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<212> Type : DNA
<211> Length : 705
      SequenceName : SEQ ID 665
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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accaccagta agctggttgt gacgccactc ggtagcctgg cgttccagta tgccgaaggc    180
attaaaggtt ttaactcaca gaaaggtcta tttgacgtgg ctatcgaggg tgactcaacg    240
gctaccgcct ttaaactgac ctcacgtctt atcaccaaca cattaaccca gttggatacc    300
tcaggttcca cactgaatgt gggcgtggat tataacggcg cggcagtcga aaaaactggc    360
gataccgtga tgatcgatac cgccaacggc gtactgggcg gcaaccttag cccgctggca    420
aacggttaca atgccagcaa tcgtaccacc gcacaggatg gtttcacttt ctccatcatc    480
agcggcacca ccaatggtac caccgcagta accgattaca gcactctacc ggaaggcatc    540
tggagcggcg acgttagcgt acagttcgac gcgacctgga ccagttaa                 588
<212> Type : DNA
<211> Length : 588
      SequenceName : SEQ ID 666
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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accgggcagg ggcagaaatc tgcaggtgat accagtttta cgctggcctg gaaaccggga    120
gaggaaggcc agaaagggct tataggctgg tttgaaagcg gcgatgtccg ggcctataaa    180
atccgttttc cgaatggcac ggtggatgtg tttcgtggct gggtcagcag tatcggtaag    240
gccgtgacgg cgaaagaagt gatcacccgc acggtgaaag tcactaacgt gggtaaacct    300
tctgtagcgg aagaacgcag caaaattacg ccggtcagtg cgattaaggt gacgccgaca    360
tccggtacgg tggcaaaagg gaaaacaacc accctgacgg tttcttttga gccggaaagt    420
gcaacagaca agacgttcag agcggtttcc gccgatccgt cgaaagccac cattagtgtg    480
aaagatatga caattacggt aaacggcgtg gcgacaggta aggtgcagat ccctgtggtg    540
agcggaaatg gtcagttcgc cgcagtggct gaagtcaccg ttactgaagc gggcgctgca    600
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<212> Type : DNA
<211> Length : 606
      SequenceName : SEQ ID 667
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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accgggcagg ggcagaaatc tgcaggtgat accagtttta cgctggcctg gaaaccggga    120
gaggaaggcc agaaagggct tataggctgg tttgaaagcg gcgatgtccg ggcctataaa    180
atccgttttc cgaatggcac ggtggatgtg tttcgtggct gggtcagcag tatcggtaag    240
gccgtgacgg cgaaagaagt gatcacccgc acggtgaaag tcactaacgt gggtaaacct    300
tctgtagcgg aagaacgcag caaaattacg ccggtcagtg cgattaaggt gacgccgaca    360
tccggtacgg tggcaaaagg gaaaacaacc accctgacgg tttcttttga gccggaaagt    420
gcaacagaca agacgttcag agcggtttcc gccgatccgt cgaaagccac cattagtgtg    480
aaagatatga caattacggt aaacggcgtg gcgacaggta aggtgcagat ccctgtggtg    540
agcggaaatg gtcagttcgc cgcagtggct gaagtcaccg ttactgaagc gggcgctgca    600
gggtaa                                                               606
<212> Type : DNA
<211> Length : 606
      SequenceName : SEQ ID 668
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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ctcgtcgtga ccacgaatcg ttcggcaagc aacctttggg aaagcccggc gactatacag    180
gttattgacc aacaaacatt gcagaactcc accaatgcct ccatagccga taatttgcag    240
gacatccccg gagtagagat aacagacaac tccttggcag gccgtaaaca aatccgcatt    300
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cgtggcgaag catcctcccg tgttttaatt ctcattgatg gtcaggaggt aacttatcag    360
cgcgccggag ataattatgg tgtgggactg ttgatagatg agtctgcgct ggagcgtgtt    420
gaggtagtga aaggtccata ttccgtactg tacggttcac aggcaattgg cggtattgtt    480
aacttcatca ccaaaaaggg aggtgacaaa cttgcatctg gagttgtgaa agctgtttat    540
aattccgcaa cagcaggctg ggaagaatca atcgcggtcc aggggagcat cggtggattt    600
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aaccatcgtt ttggcctctc gcttgatcgc tacagactcg cgacacaaac ttactatgag    780
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tttattcgtg ctgcctctag tgcaaaagat gacagtaacg gtaccgaaac aaatgttccg   1980
ggctgggcca ctctcaactt tgcagtaaat acagaattcg gtaacgagga tcagtaccgg   2040
attaacctgg cactcaataa cctgacagac aaacgctacc gtacagcaca tgaaactatt   2100
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<212> Type : DNA
<211> Length : 2148
      SequenceName : SEQ ID 669
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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gagccacaac agcctgtccc cacagtgccc tcggtgccga cgatcccgca gcagccaggc    180
ccaattgagc acgaagatca aactgcaccg cctgcgccgc atattcgcca ttatgactgg    240
aatggcgcaa tgcagccgat ggtcagtaag atgcttgggg ctgacggggt gactgcgggt    300
agcgtcctgc tggttgatag cgttaacaac cgtactaacg gttcgctgaa tgccgcagaa    360
gcgaccgaaa cgctgcgaaa tgcgctggct aataacggga aatttaccct ggtttccgcc    420
cagcagctgt cgatggctaa gcaacagtta ggtttgtcgc cgcaggatag tttaggcacc    480
cgtagtaaag ccataggcat tgcccgcaat gtcggcgctc attacgtgct gtactccagc    540
gcctctggca acgttaacgc tccgacccta caaatgcagc tgatgctggt gcagacgggc    600
gaaattatct ggtcaggtaa aggtgccgtt tcgcagcaat aa                       642
<212> Type : DNA
<211> Length : 642
      SequenceName : SEQ ID 670
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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gcagccgaag tttataataa agacggcaac aaattagatc tgtatggcaa agttgatggc    120
ctgcattatt tttctgataa ttcagcgaaa gatggcgacc agagctatgc gcgtctgggt    180
tttaaaggcg aaacccaaat taacgatcaa cttactggct acggtcaatg ggaatacaat    240
attcaggcaa acaacactga atcttcaaaa aaccagtcat ggacccgtct ggcatttgcc    300
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<212> Type : DNA
<211> Length : 372
      SequenceName : SEQ ID 671
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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aaggtgaagg atctgacgcc gggcgagatg acggcagaac cctacgatga taactacctg     180
gatgatgaag acgcggactg gaccgcgacc gggcaggggc agaagtctgc aggagatacc     240
agttttacgc tggcctggaa accgggagaa gaaggtcaga aagggcttat aggctggttt     300
gaaagcgggg atgtgcgggc ctataaaatc cgtttcccaa atggcacggt ggatgtgttc     360
cgtggctggg tcagcagtat cggtaaggcc gtgacggcga aagaagtgat cacccgcacg     420
gtgaaagtca ctaacgtggg caaaccttcc gtggcggaag aacgcagcga aattacgccg     480
gccactgcaa ttaaggtgac accgacatcc ggtacggtgg caaaagggaa aacaaccacc     540
ctgactgttt cttttgagcc ggaaagtgca accgacaaga cgttcagagc ggtttccgcc     600
gatccgtcga aagccaccat tagtgtgaaa gatatgacaa ttacggtaaa cggcgtggcg     660
acaggtaagg tgcagatccc tgtggtgagc ggaaatggtc agttcgccgc agtggctgaa     720
gtcaccgtta ctgaagcggg cgctgcaggg taa                                  753
<212> Type : DNA
<211> Length : 753
      SequenceName : SEQ ID 672
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
<400> PreSequenceString :
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aacggcaagg gtgatgctta tgcaaacccg ttgtcagacg atgactggca gcgactggct     120
aaggtgaagg atctgacgcc gggcgagatg acggcagaac cctacgatga taactacctg     180
gatgatgaag acgcggactg gaccgcgacc gggcaggggc agaagtctgc aggagatacc     240
agttttacgc tggcctggaa accgggagaa gaaggtcaga aagggcttat aggctggttt     300
gaaagcgggg atgtgcgggc ctataaaatc cgtttcccaa atggcacggt ggatgtgttc     360
cgtggctggg tcagcagtat cggtaaggcc gtgacggcga aagaagtgat cacccgcacg     420
gtgaaagtca ctaacgtggg caaaccttcc gtggcggaag aacgcagcga aattacgccg     480
gccactgcaa ttaaggtgac accgacatcc ggtacggtgg caaaagggaa aacaaccacc     540
ctgacggttt cttttgagcc ggaaagtgca accgacaaga cgttcagagc ggtttccgcc     600
gatccgtcga aagccaccat tagtgtgaaa gatatgacaa ttacggtaaa cggcgtggcg     660
acaggtaagg tgcagatccc tgtggtgagc ggaaatggtc agttcgccgc agtggctgaa     720
gtcaccgtta ctgaagcggg cgctgcaggg taa                                  753
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<211> Length : 753
      SequenceName : SEQ ID 673
      SequenceDescription :

Sequence
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<213> OrganismName : Escherichia coli O157:H7
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gtaaatggtc tgaacttcgc ggtgcagtat caaggtaaca acgaaggtgc cagtaatggt     180
caggaaggca ccaacaacgg acgtgatgtt cgccatgaaa acggtgacgg ctggggtctt     240
tccacaacat atgatttagg catgggcttt agcgctggtg cggcatacac ctcttctgac     300
cgcaccaatg accaggttaa ccatactgcg gcgggtggtg ataaagcaga cgcgtggact     360
gctgggctaa aatacgatgc taacaatatt tacctggcaa ccatgtattc agaaacgcgt     420
aatatgaccc cgtttggcga cagcgattat gctgttgcaa acaaaaccca gaactttgaa     480
gtcactgcac agtaccagtt tgattttggt ctgcgtccgg cagtctcttt cctgatgtct     540
aaaggccgtg acctgcacgc tgccggtggt gcagacaacc cggcaggtgt tgatgataaa     600
gatctggtta aatacgccga tgttggcgcg acttactatt tcaataaaaa catgtccact     660
tatgttgact ataaaatcaa cctgttggat gaagatgaca gtttctacgc tgccaacggc     720
atctctaccg atgatattgt cgctttaggt ctggtttatc agttctaa                  768
<212> Type : DNA
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<211> Length : 768
      SequenceName : SEQ ID 674
      SequenceDescription :

Sequence
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<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
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acttttttcag cgaacgcaca aacttatcct gatttgccag tggggatcaa aggaggaaca    120
ggcgcattaa ttggcgacac agtttatgtg ggattaggtt ctggtggcga taaattctat    180
accttagacc taaaagatcc ttcagcacaa tggaaagaaa ttgctacatt tccgggtggc    240
gaacgcaatc aacctgttgc agccgcagtg gatggaaaac tttatgtatt cggtggttta    300
caaaaaaatg aaaaaggcga acttcaactc gttaatgacg cttatcgcta taacccaagc    360
gataatactt ggatgaaact tcctactcgt tctccccgtg gtttagtagg atcaagtggt    420
gcatctcacg gagataaagt ttatatttta ggcggctcta atctctctat atttaatggc    480
ttcttccaag acactgtggc agcaggtgaa gataaagcga aaaaagatga aatcgcagca    540
gcttatttcg atcaacgtcc agaagattat ttctttacaa cagaattatt gagctatgaa    600
ccatcaacca ataaatggcg caatgaaggt cgtattccat tctctggtcg tgctggtgca    660
gcctttacaa ttcaaggtaa tgagctagtg gttgtcaatg gcgaaattaa acctggactt    720
cgcaccgctg aaacccatca aggtaaattc actgctaaag gtgtgcaatg gaaaaactta    780
cctgacttac ctgctccaaa aggcaaatca caagatggtt tagctggtgc gctttcaggc    840
tatagtaacg gtcattattt agtcactggc ggcgcaaatt ttccaggttc aatcaaacaa    900
ttcaaagaag gaaaacttca cgcacataaa ggtttaagca aagcttggca taacgaagtt    960
tatacgttga ataatggtaa atggcgcatt gttggggaat taccaatgaa tattggttat   1020
ggtttttctg tatcttacaa caataaagtt ttactgattg gcggtgaaac tgatggaggt   1080
aaggctttaa ctagcgtcaa agcaataagc tatgacggta aaaaattaac catcgaataa   1140

<212> Type : DNA
<211> Length : 1140
      SequenceName : SEQ ID 675
      SequenceDescription :

Sequence
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<213> OrganismName : Haemophilus influenzae Rd
<400> PreSequenceString :
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gcgtatgttt cttggttaaa aacaaaaggg gatgatttaa aatcttcaaa agggtatttt    120
ttggcagggc gtgggttaag cggtttagta attggctgct caatggtgct gacatcgctt    180
tcaactgaac aacttatcgg tgtcaatgcg gtgtcctata aaggtaattt ttccgtgatt    240
gcttggacag ttccaacggt tattccgctt tgtttcttgg ctctttatat aattggctgg    300
ctataa                                                                306
<212> Type : DNA
<211> Length : 306
      SequenceName : SEQ ID 676
      SequenceDescription :

Sequence
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<213> OrganismName : [Helicobacter pylori, strain J99
<400> PreSequenceString :
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catttttat ttttctgctt tattctagga gcgtttttat taggtttgct cagtccagct    120
tatgctttaa gtattatcac cactaaagaa attgacgcta atttgcttaa tggagcgata    180
gaaagcaggg tggtgttagg caagagggtg tttaaagtag aagctcatgg gttttatttt    240
agaaacaatg cgactaacag catagatata gaaatcacca gtcttttaag agacaatcaa    300
tcgtttcctt tgactagcag tgctaaaacc agtttaaaaa tacctcctaa cgccaagatt    360
aaaaaatcca ctatccttgt tttgaaaggc gagaacgctg aagaagtggc taagatttta    420
ggcgttagca aagaagaata ccaaaagcta gaaaacatcg ctcaaaccaa agcggctaat    480
gaccctatgt atgctaacac gccttttagt aatggttctg atagttcctt ttacgataac    540
aatcctaata gccctagcaa taacgctatc aatggcaaag atggcgcaaa tgggagtaac    600
ggctatgggg caaatggcaa tgatggggta aatgggatca gtgggagtaa tggtgcaaat    660
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gtggatgggg tgaatggctc tagttcttca agtggcggct ctgtaggggg ttatgagaat    780
aatttcacta atcatggctc tactaacaat aacacaggag ggtatgacaa ttttaataat    840
ggcagctcaa gtggtgggag tttagggaat ggggggcttt tccctattcc ttttggtaat    900
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ggagacacaa acaattccaa taattccact aacaccacta gcccaactaa tggcagtagt      960
tctaataacg ccactaatcc tagttcgcaa gaaaacaatt actccagcca gtattgtaaa     1020
gtgccagagt taagccccaa caacacgatg aaactagatg ttatcgctaa agatggctct     1080
tgtatttcta tgaacgcttt aagagatgac actaaatgcg cttatagata cgattttgaa     1140
gccggtaaag ccatcaagca aacgcaatac tactatgtag atagggaaaa taaaacgcaa     1200
aatatcggtg gttgtgtgga tttacaaggc gctcaatacg ccatgcaact ttacaaagat     1260
gacagcaaat gcgccttaca aaccacgagc gataaaggtt atggtatggg gaaaacgcaa     1320
acctttcaaa ctgaaatcgt gtttcgtggg atggacaatt taatccatgt cgctgtgcct     1380
tgcagcgatt atgcaagggt gcaagacagg attgttaggt atgaaaaaaa tgataaaacc     1440
caaaccttaa cgcctatagt ggatcagtat tataatgatc ctaacaaccc taacaagcaa     1500
gagattttaa atcgtgggat tgccacccaa ttaagctcgc aatatcaaga atttgcatgc     1560
ggtcaatggg aatacaatga cgctaaatta gaagccaaaa gacctacaat gctaaaaagc     1620
tataacaagc ttaatggaga atgggtagaa gttacgccct gtaattttga agcagggatt     1680
aaaagcggtg cggttgttag cccttatgtg atgggcgtgc ctagttctaa agtcttaagc     1740
gatattacta caagccatta ttttaggata gaaaggaaaa attatggtga gagagaacaa     1800
tgccaaaaac tttatggagt caatcgttgc caaccgcaat attccatact gatcctagta     1860
tcaccgattg gagcgccact tacaaaacca ctaccaccca aaccactcaa ccttatttac     1920
gcccagccca agataatgaa aaacacccca caacctataa tcttatcacc actcaaacca     1980
ccatcaacag gactcaaagc gttttga                                        2007
<212> Type : DNA
<211> Length : 2007
      SequenceName : SEQ ID 677
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gcaaaagaaa agaaagtttt taagaatgtg ggaatatcta taatggggat tgctttttgg      120
gaagcgataa aagactcgat aaaaaaacaa attaaaaaaa gcgattggat atgcgggaat      180
gttaagactg cggatgatta tttaaaaacg catcctaact catggtttaa ttcagcaata      240
ggtgtaacag cgataacagc catgcttatg aatgtgtgtt ttgctgatga ccaatccaaa      300
aaagaagtgg ctcaagctca aaggaagct gaaaacgcta gggatagagc gaacaagagt      360
gggatagaac tggaacaaga agagcaaaag acagaacaag aaaaacaaaa gacagaacaa      420
gaaaaacaaa agacagaaca agaaaaacaa aagacagaac aagaaaaaca aaagacagaa      480
caagaaaaac aaaagacaag caatatagag actaacaatc aaataaaagt agaacaagaa      540
caacaaaaga cagaacagga aaaacaaaag acaaacaata cgcaaaaaga tttggttaac      600
aaagcagaac aaaattgcca agaaaatcat aatcaattct ttattaaaaa atttaggaatt     660
aaggctggca ttgctataga aatagaagct gaatgcaaaa cccctaaacc cacaaaaacc      720
aatcaaaccc ctatccagcc aaaacacctc ccaaactcca aacaacccca ttctcaaaga      780
ggatcaaaag cgcaagagct tatcgcttat ttgcaaaaag agctagaatc tctgccctat      840
tcacaaaaag ctatcgctaa acaagtggat ttttataggc caagttctat cgcttattta      900
gaactagatc ctagagattt taacgctaca gaagaatggc aaaaagaaaa tttaaaaata      960
cgctctaaag ctcaagctaa aatgcttgaa atgaggagtt taaaaccaga cccacaagcc     1020
cacctttcaa cctctcaaag ccttttgctc gttcaaaaaa tatttgctga tgttagtaaa     1080
gaaataaaag tagttgctaa taccgagaaa aaagtagaaa aagcgggtta tggttatagt     1140
aaaaggatgt ag                                                        1152
<212> Type : DNA
<211> Length : 1152
      SequenceName : SEQ ID 678
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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gaaatcacta acgagctttt aaagcaatta caaaacgctt taaggagcaa cgcgcatttt      120
agcgagcaag tggaattaag ccttaaatgc atcgttagga ttttagaagt gcttttgagt      180
ttggattttt ttaagaatgc gaatgagatt gatagcagtt taagaaattc cattgagtgg      240
ctgactaacg ccggcgagag cttgaaatta aaaatgaaag aatacgagcg ctttttttagc     300
gagtttaata cgagcatgca tgccaacgag caggaagtaa ccaatacctt aaacgctaac      360
gccgagaaca ttaaaagcga aattaaaaag ctagaaaatc aattgataga aaccacgaca      420
agacttttaa cgagctatca aatcttttta aaccaagcca gagataacgc taacaaccaa      480
atcacaaaaa acaaaaccca aagccttgaa gcgattacac aagctaaaaa caacgctaat      540
aatgaaataa gcaacaatca aacgcaagcg ataactaata tcaccgaagc gaaaacgaac      600
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gctaataatg aaataagcaa caatcaaacg caagcgataa ctaacattaa cgaagccaaa     660
gaaagcgcta caacgcaaat aaacgccaat aagcaagaag caataaataa catcacgcaa     720
gaaaaaaccc aagccacaag cgagatcacc gaagcgaaaa agaccgatca ttatcaaaac     780
attgattttt ttgagtttga ataa                                            804
<212> Type : DNA
<211> Length : 804
      SequenceName : SEQ ID 679
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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tttttaagcc ccacccttac gcaagccaaa agccgttttt atgtggcttc tcaataccag     120
gtggggaaaa tgatcatgaa aaaatacaac gatctcaaac gcacgattga aggggcgagc     180
ttttctttag gctgggagat taacccccact aattactggt tttattcgcg ctattacttt     240
tttatggatt acgggaatgt cattctcaat aaaagaacgg gcgctcaagc gaacatgttc     300
acttacggct ttggaggggga tttgatcatg gaatacaata aaaacccttt gtatgtattt     360
tctcttttttt atggcatgca agttgctgaa aacacatgga cgatttccaa acacagcgcg     420
aatttcatca ttgacgactg gcgcagcatt caagggtttt cgctcaaaac ttcaaatttc     480
aggatgttgg gtttagtggg gtttaaattc caaaccgtgc tattccacca tgacgctagt     540
attgaagtgg ggatcaaatg gccttttgct tttgaatacg actcaccctt tgtaaggctt     600
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<212> Type : DNA
<211> Length : 636
      SequenceName : SEQ ID 680
      SequenceDescription :

Sequence
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<213> OrganismName : Helicobacter pylori, strain J99
<400> PreSequenceString :
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aacaacaatc ttatcccagc aaaatccgat agtttagaaa gtttcaaaga acaagaaaac     180
aaagaaaaag ccaaacagct tatggattta aaggccttac agagcgtgta tttttctaaa     240
aatagaaaat tgcaagacaa taatttcaat gtcttgtatg tggcaggcaa caccaacaaa     300
atccgcttac gctatgcgat gactaccacc tttatttttg ataatgatcc tattatctat     360
gtgagtttag gagatcctag cgattttgaa ctcacttacc ccactaatga tcattacgat     420
ttgtctaaca tgctagtgat taagccgtta cttatagggg tggatacgaa cctaaccgta     480
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<212> Type : DNA
<211> Length : 522
      SequenceName : SEQ ID 681
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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agcaacagta gtacgagtgg ggtaacgacc cagggacaat cccaaaatgc atccagtaac     120
gaacccgcac cgacgttttc gaatgtcggc gttggtctca aagccaatgt caacggcacc     180
ttaagtggtt cgcgaactac gcctaatcag caaggcactc cctggttaac cctcgaccaa     240
gccaacctcc agctctgaac gggcgcgggg tgaaggaatg ataagaacgg acaaagtgac     300
gaaaactaca ccaatttcgc gagtgctaag ggcagtacga accagcaggg ttcaacaacg     360
ggtggatcag cgggcaaccc cgactcgtta aagcaggata aggctgataa aagtggtgat     420
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cccagcgggt gcagctgttc ctgcgcggcc tgttgggcag catcccggtg ttggtcaata     600
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<212> Type : DNA
<211> Length : 666
      SequenceName : SEQ ID 682
      SequenceDescription :
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Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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acaagtggtt cgcgttcctt tctcccgacg ttttcgaatg tcggcgttgg cctcaaagcg     120
aatgtccagg gcaccctcgg gggcagacag acgacgacta cggggaacaa tattcccaaa     180
tgagccaccc tcgaccaagc caacctccag ctctgaacgg gggcggggtg aaggaatgat     240
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<212> Type : DNA
<211> Length : 1584
      SequenceName : SEQ ID 683
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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ttcaacctcg cggggtcggt gctcgaccag gtgttggatt atgtgccctg gattgggaat     120
gggcacaggt atgggaataa ccaccggggc gtggatgata taaccgcgcc taaaaccggc     180
gcggggtcgt ccagcggaac tagtacgaac acaagtggtt cgcgttcctt tctcccgacg     240
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ctctgaacgg gggcggggtg aaggaatgat aaggcttcaa acaaacaaag tgacgaaaac     420
cacaccacct ttaaaagcgc tacgggcagt ggccagcagg gtggttctac aacgggtggt     480
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caagctcagg cggccgcgca agcagctacc accgccgccg caacagggga cgccttaccg    1320
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ccaaccaggt tcgcaccaag ctgcgccaaa gctttggtac agaccattcc acccaagcca    1560
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aaccccaatc cctcaaaaca accacaccgg tgtttgggac gaatagtggt aacattggca    1620
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ccgttgaacg ggtgagtggg tggcttgtgg ggcaattacc cagtgggggt ggggggaata    1740
gtagtgagga tattaaaagt gtgcaagaca ctcctattta tatctatatt cattagtata    1800
ttctttttaa attgttccct cactttattc atatgaacca ccgcctccct cgcgacggga    1860
ctcaccgtag tgggacactt cacaagtacc accacgacgc tcaagcgcca gcaatttagc    1920
tacacccgcc ctgacgaggt cgcgctgcgc cacaccaatg ccatcaaccc gcgcttaacc    1980
ccgtgaacgt atcgtaacac gagcttttcg tccctccccc tcacgggtga aaaccccggg    2040
gcgtgggcct tagtgcgcga caacaccgcc aagggcatca ctgccggcag tggcagtcaa    2100
caaaccacgt atgatcccac ccgaaccgaa gcggctttga ccaccgccac cacctttgtg    2160
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<212> Type : DNA
<211> Length : 2214
      SequenceName : SEQ ID 684
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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agcaacagta gtacgagtgg ggtaacaacc cagggacaac aatcgcaaaa tgcatccgga     120
accgaacccg catccacttt ttcgaatgtc ggcgttggcc tcaaagcgaa tgtccagggc     180
accctgggtg gcagtcagac gacgactacg gggaaagata ttcctaaatg acccacccctc    240
gaccaagcca acctccagct ctgaacgggg gcggggtggc ggaatgataa ggcttcaagt     300
ggacaaagtg acgaaaacca caccaagttc acgagcgcta cgggcagtgg gcagcagggc     360
agttcttcag gtacaactaa ttccgcgggc aatcccgact cgttaaagca ggataaggtt     420
gataaaagtg gtgattcggt aacggttgca gaaaccactt caggggacaa cttgacgaat     480
tacaccaacc tccctcccaa cctcaccccc accgctgatt gaccgaacgc gctgtcattc     540
accaacaaga acaacgcgca gcgcgcccag ctcttcctcc gcgccctgtt gggcagcatc     600
ccggtgttgg tgaataagag tggccaagat gattccaaca agttccaagc caccgaccaa     660
aaatggtctt acaccgaatt aaagtcggat caaaccaagc tcaacctccc cgcttacggg     720
gaggtgaatg ggttgttgaa tccggcgttg gtggaggtgt acggtctgag ttccactcaa     780
ggttctagca ccggagccgg tggcgctgga ggtaacaccg gaggcgacac caatacccag     840
acttatgcac gacccggaat cggctttaaa ttaccctcca cggactcgga atcttccaaa     900
gccaccctga tcacccccgg gttggcttga acagcgcaag atgtcggtaa cctcgttgtc     960
agtggtacca gcttgagctt ccagctcggc gggtggttgg ttaccttcac ggattttatc    1020
aaaccccggt cgggttacct cgggctccag ttaacgggct tggatgcaaa tgacagcgac    1080
caaagggagt taatttgagc ccccccggcc ctgaaccgcc tttcgtggca gttgggtcaa    1140
ccgcttgggc cgcgtggaga gtgtgtggga tttcaagggg gtgtgggcgg atcaagctcg    1200
gtccgactcg caagcagcta caagtaccac caccgcaacg aaggctacct tatcggagca    1260
caccaatgct ttggcctttc aggtgagtta taccgaccag gattcgtaca aggcttccac    1320
tcaaagctcc ggccaaaacc aaaacacctc cccctacctg cacttggtgc aggggaaaaa    1380
agtaggttcc tctgataa                                                  1398
<212> Type : DNA
<211> Length : 1398
      SequenceName : SEQ ID 685
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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gccaccgacc aaaaatggtc ctacaccgac ttacagtcgg accaaaccaa actgaacctc     120
tccgcttacg gtgaggtgaa tgggttgttg aatccggctt tggtagaaac ctattttggg     180
acgacgcgta cgtctagcac tgcgaaccaa aacagtacaa ccgtccccgg tatcggtttt     240
aaaattcccg aacaaaataa tgattccaaa gccaccctga tcacccccgg gttggcttga     300
acgccccagg acgtcggtaa cctcgttgtc agtggcacca cggtgagctt ccagctcggc     360
gggtggctgg tcaccttcac ggactttgtc aaaccccgcg cgggttacct cgggctccag     420
ttaagtggcc tgaatgccag tgacagcgac caaagggagt taatttgggc cccccggccc     480
tgagcggcct ttcgtggcag ttgggtcaac cggttgggcc gcgtggagag tgtgtgggat     540
ttgaaggggg tgtgggcgga tcaagctcag ttggccgcgc aagcagctac aagtagtacc     600
accaccaccg caacaggggc taccttaccg gagcacccga atgctttggc gtaccaaatt     660
agctataccg acaaggattc gtacaaggct tccactcaag gttcgggtca aaccaattcc     720
caaaacaatt cgctctacct ccatttgatt aaacctaaga aagtcgaaag cacgacccaa     780
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ctcgaccagg gcttaaaaaa cctgttggac cccaaccagg ttcgcaccaa gctgcgccaa      840
agctttggta cagaccattc cacccagccc cagccccaat cgctcaaaac aacgacaccg      900
gtgtttggag ccatgagtgg taacctcggc agtgtgctta gtggtggggg tgctggagga      960
gcaggcagca ccaattcggt ggacctctcc cccgttgaac gggtgagtgg gtcactaacc     1020
attaatagga atttttctta ttaa                                            1044
<212> Type : DNA
<211> Length : 1044
      SequenceName : SEQ ID 686
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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aagattagta agagtgggga tagtttaacc acgcaggacg gcaatgcgac cggtcaacaa      120
gaggccacta actacaccaa cctccccccc aacctcaccc ccaccgctga ttgaccgaac      180
gcgctgtcat tcaccaacaa gaacaacgcg catcgcgccc agctcttcct tcgcggcttg      240
ttgggcagca tcccggtgtt ggtgaatcga agtgggtccg attccaacaa attccaagcc      300
accgaccaaa aatggtccta caccgactta cagtcggatc aaaccaagct gaacctcccc      360
gcttacggtg aggtgaatgg gttgttgaat ccggcgttgg tggaaaccta ttttgggaac      420
acgcgagcgg gtggttcggg gtccaacacg accagttcac ccggtatcgg ttttaaaatt      480
cccgaacaaa ataatgattc caaagccacc ctgatcaccc ccgggttggc ttgaacgccc      540
caggacgtcg gtaacctcgt tgtcagtggc accagcttga gcttccagct cggcgggtgg      600
ctggtcagct tcacggactt tatcaaaccc cgcgcgggtt atttgggcct ccagttaagt      660
ggcctggatg ccagtgacag cgaccaaagg gagttaattt gggccaagcg gccctgagcg      720
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tcagctttgg cacctcaccc gaatgctttg gcgtttcagg tgagtgtggt ggaagcgagt      900
gcttacagct cttcaacctc aagttcgggt tccgggtcaa gttcaaacac ctcccccctac      960
ctccatttga ttaaacctaa gaaagtcgaa agcacgaccc aactcgacca gggcttaaaa     1020
aacctgttgg accccaacca ggttcgcacc aagctgcgcc aaagctttgg tacagaccat     1080
tccacccagc cccaatcgct caaaacaacg acaccggtat ttgggacgag tagtggtaac     1140
attggcagtg tgcttagtgg tgggggtgct ggaggggggtt cttcaggctc aggtcaatct   1200
ggtgtggacc tctccccccgt tgaacgggtg agtggtcact aa                      1242
<212> Type : DNA
<211> Length : 1242
      SequenceName : SEQ ID 687
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
ttgggcctcc agttaagtgg cctggatgcc agtgacagcg accaaaggga gttaatttgg       60
gccaagcggc cctgagcggc atttcgtggc agttgggtca accggttggg acgggtcgag      120
agtgtgtggg atttgaaggg ggtgtgggcg gatcaagctc acagcgcggt gtccgagtcg      180
caagcagcta caagtagtac caccaccacc gcaacagggg acaccttacc ggagcacccg      240
aatgccctcg cgtaccaaat tagctccacc gacaaggatt cgtacaaggc ttccactcaa      300
ggctccggtc aaaccaattc ccaaaacacc tccccctacc tgcatttgat taaacctaaa      360
aaagttactg cttccgacaa gttagacgac gatcttaaaa acctgttgga ccccaacgag      420
gttcgggtga agctgcgcca aagctttggt acagaccatt ccacccaacc ccaaccccaa      480
cccctcaaaa caacgacacc ggtgtttggg acgaatagtg gtaacctcgg tagtgtgctt      540
agtggtgggg gtaccacgca ggactcaagc accaccaatc aactgtcacc cgttcaacgg      600
gtgagtgggt ggcttgtggg gcagttacca agcacgagtg acggaaacac ctcctccacc      660
aacaacctcg cgcctaatac taatacgggg aatgaggtgg tgggggtggg agatttgtct      720
aagcgagctt ccattgaatc aagtcgtttg tgaatagcat taaaacctta g              771

<212> Type : DNA
<211> Length : 771
      SequenceName : SEQ ID 688
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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gatcctgcgc gaaccgaggc caccttgacc accaccacct ttgcgctgcg ccggtatgac    120
ctcgccgggc gcgccttata cgacctcgac ttttcgaagt taaacccaca aacgccaacg    180
cgtgatgcca actgccagat cacctttaac ccctttggcg gctttggttt gagtggcagt    240
gcaccccaac agtgaaacga ggtcaaaaac aaggtccccg tcgaggtggc ccaagacccc    300
accgatcctt atcggtttgc cgttttactc gtgccgcgca gtgtggtgta ctatgagcag    360
ttgcaaaggg gattagcgct ccctaaccaa gggagttcgt caggctccgg tcaacaaaac    420
accaccattg gcgcgtatgg gctgaaggtg aagaacgccg aggcggacac cgcaaagagc    480
aatgaaaaac tccagggcga tgaatccaag tcttccaatg gatcttcaag cacttccacc    540
accacccaac gtggttcgac caattccgac accaaagtca aggctttaaa aatagaggtg    600
aaaaagaaat cggactcgga ggacaatggt cagctgcagt tagaaaaaaa tgatctcgcc    660
aacgctccca ttaagcgggg cgaggagtcg ggtcagtccg tccaactcaa ggcggacgat    720
tttggtactg ccccttccag ttcgggatca ggcggcaact ccaaccccgg ttcccccacc    780
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tcgatcctga ttctgtacga tgcgccttat gcgcgcaatc gtaccgccat tgatcgcgtt    900
gatcacttgg atcccaaggt gatgaccgcg aactatccgc ccagttgaag aatgcccaag    960
tgaaaccacc acgggttgtg ggactgaaag gcgcgcgatg ttttgttcca aaccaccggg   1020
tttgatgaaa gtaatacttc gaacaccaag cagggctttc aaaaggaagc tgactccgac   1080
aagtcggccc ccatcgccct cccgtttgaa gcgtacttcg ccaacattgg caacctcacc   1140
tggttcgggc aagcgctttt ggtgtttggt ggcaatggcc atgttaccaa gtcggcccac   1200
accgcgcctt tgagtatttg gctttatata tatttagtaa aggcagtcac ttttaggttg   1260
cttttagcta actctttatt atcaaaaagc aacatatata aaaaaacagc taattaa      1317
```

<212> Type : DNA
<211> Length : 1317
SequenceName : SEQ ID 689
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :

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gatcccaccc gaaccgaggc caccttgacc accgccacca cctttgcgtt acgccggtat    120
gacctcgccg ggcgcgcctt atacgacctc gatttttcga agttaaaccc acaaacgccc    180
acgcgcgacc aaaccggtca gatcaccttt aacccctttg gcggctttgg gctgagtggg    240
gctgcacccc aacagtgaaa cgaggtcaag gataaggtcc ccgtcgaggt ggcccaagac    300
ccctccaatc cttatcggtt tgccgtttta ctcgtgccgc gtagcgtggt gtactatgag    360
cagttgcagc gggggttagc gctccctaac caagggagtt cgtcaggctc cggtcaacaa    420
aacaccacca ttggcgcgta tgggctgaag gtgaaaaacg ccgaggcgga caccgcgaag    480
agcaatgaaa aactccaggg ctatgaatcc aagtcttcca atggatcttc aagcacttcc    540
accacccaac gtgggggttc gtcaaatgaa aacaaagtca aggcgttgca ggtggcggtg    600
aaaaagaaat ccgggagtca gggcaactcc ggtgaccaag gcaccgaaca ggtggaactt    660
gaatctaatg atttagccaa cgccccgatt aaacgaggct ccaataacaa ccagcaagtc    720
caactcaagg cggacgattt tggtactgcc ccttccagtt cgggatcagg cacccaagat    780
ggcaccccca ccccctgaac gccgtggtta acgactgagc aaattcacaa cgaccccgcc    840
aaattcgccg cctcgatcct cattctgtac gatgcgcctt atgcacgcaa ccgtaccgcc    900
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agaacgccca agtgaaacca ccacggtttg tgggactgaa aggcgcgcga tgttttgctc   1020
caaaccaccg ggttcttcaa cccgcgccgc caccccgagt ggtttgatgg cgggcagacg   1080
gtcgcggata acgaaaagac cgggtttgat gtggataact ccgaaaacac caagcagggc   1140
tttcaaaagg aagctgactc cgacaagtcg gccccgatcg ccctcccgtt tgaagcgtac   1200
ttcgccaaca ttggcaacct cacctggttc gagcaagcgc ttttggtgtt tgggatttgt   1260
ttgtcttaa                                                           1269
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<212> Type : DNA
<211> Length : 1269
SequenceName : SEQ ID 690
SequenceDescription :

Sequence

<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :

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ccggccaaac ccaatccact aacagttccc cctacctgca cttggtgaag cctaagaaag    120
ttacccaatc cgacaaagtt agacgacgat cttaaaaacc tgttggaccc caacgaggtt    180
cgcgccagaa tgctcaaatc atttggtaca gaaaatttca cccaacccca accccaaccc    240
```

```
caagccctca aaacaacgac accggtattt gggacgagta gtggtaacct cggtagtgtg     300
cttagtggtg gggggtacca cgcagggctc aagcaccacc aatcaactgt cacccgttca     360
acgggtgagt gggtggaccg ctaa                                            384
<212> Type : DNA
<211> Length : 384
      SequenceName : SEQ ID 691
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
gtgcgcgaca acagcgccaa gggcatcact gccggtagtg aaagtcaaca aaccacgtat      60
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gacctcgccg ggcgcgcctt atacgacctc gactttagta ggttaaaccc acagacacca     180
acgcgcgacc aaaccgggca gatcaccttt aacccctttg gcggctttgg tttgagtggg     240
gctgcacccc aacagtgaaa cgaggtcaaa aacaaggtcc ccgtcgaggt ggcccaagac     300
ccctccaatc cttatcggtt tgccgtttta ctcgtgccgc gtagcgtggt gtactatgag     360
cagttgcagc gggggttagc gctccctaac caagggagtt cgtcaggctc cggtcaacaa     420
aacaccacca ttggcgcgta tgggctgaag gtgaagaacg ccgaggcgga caccgcgaag     480
agcaatgaaa aactccaggg cgatgaatcc aagtcttcca atggatcttc aagcacttcc     540
accaccaccc aacgtggggg ttcgtcaggg gacaccaaag tcaaggcgtt gcaggtggcg     600
gtgaaaaaga aatccgggag tcagggcaac tccggtgaac aaggcaccga acaggtggaa     660
cttgaatcta atgatctcgc caacgctccc attaagcggg gcgaggagtc gggtcagtcc     720
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tccaaccccg gttcccccac cccctgaagg ccgtggcttg cgaccgagca aattcacaag     840
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cccagttgaa gaacgcccaa gtgaaaccac cacgggttgt gggactgaaa ggccagagat    1020
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ggccaagcgg tcgcggataa tacccaaacc gggtttgata cagatgacac cgataataaa    1140
aaaacaaggc tttcaaaagg aagctgactc cgacaagccg gccccgatcg ccctcccgtt    1200
tgaagcgtac ttcgccaaca ttggcaacct cacctggttc gggcaagcgc ttttggtgtt    1260
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<212> Type : DNA
<211> Length : 1287
      SequenceName : SEQ ID 692
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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gggggttcgt caggggacac caaagtcaag gcgttgcagg tggcggtgaa aaagaaatcc     180
gggagtcagg gcaactccgg tgaccaaggc accgaacagg tggaacttga atctaatgat     240
ttagccaacg ccccgattaa acggggctcc aatccagcaa gtccaactca aggcagccga     300
cttcggcacc accccatcca gttcggaatc tggtcaatca ggcaccccca ccccctgaag     360
gccgtggctt gcgaccgagc aaattcacaa ggacctcccc aaatgatccg cctcgatcct     420
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<212> Type : DNA
<211> Length : 450
      SequenceName : SEQ ID 693
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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gggggttcgt caggggacac caaagtcaag gcgttgcagg tggcggtgaa aaagaaatcg     180
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ccttccagtt cggaatctgg tcaatcaggc acccccaccc cctgaacgcc gtggcttgcg     360
accgagcaaa ttcacaagga cctccccaaa tgatccgcct cgatcctgat tctgtacgat     420
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gcgccttatg cgcgcaatcg taccgccatt gatcgcgttg atcacttgga tcccaaggtg      480
atgaccgcga actatccgcc cagttgaaga acgcccaagt gaaaccacca cgggttgtgg      540
gactgaaagg cgcgcgatgt cctggtccaa accaccgggt tcttcaaccc gcgccgccac      600
cccgattggt ttgaccaggg ccaagcggtc gcggagaata cccaaaccgg gtttgataca      660
gatgacaccg ataataaaaa gcagggcttt cgcaaacaag gcgaacaatc ccctgccccc      720
atcgccctcc cgtttgaagc gtacttcgcc aacattggca acctcacctg gttcgggcaa      780
gcgcttttgg tgtttgggat ttgtttgtct taa                                   813
<212> Type : DNA
<211> Length : 813
      SequenceName : SEQ ID 694
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
atgggcagtc aaaaccaggg ttctacaaca actacctcag cgggcaatcc cgattcttta       60
gttactgata aagttgatca aaaaggtcag gtgcaaacaa gtggtcaaaa tttaagtgat      120
accaactaca ccaacctctc ccccaacttc acccccacat ccgactgacc gaacgcgctc      180
agcttcacca acaagaacaa cgcgcagcgc gcccagctgt tcctgcacgg cttgttgggc      240
agcatcccgg tgttggttaa taagagtggc gaaaataacg aaaaattcca agccaccgac      300
caaaaatggt cctacaccga attaaagtcg gatcaaacca agctcaacct ccccgcttat      360
ggtgaggtga atgggctgtt gaatccggcg ttggtggaaa cctattttgg gacgacgcgt      420
acgtctagca ctgcgaacca aaacagtaca accgtccccg gtatcggttt taaaattccc      480
gaacaaaata atgattcaaa ggctgtgctg atcacccccg ggttggcttg aacgccccag      540
gacgttggta acctcgttgt cagtggcacc agcttcagct tccagctcgg cgggtggctg      600
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ggtgtgggcg gatcaagctc agtccgactc gcaaggatct accaccaccg caacaggggc      840
taccttaccg gagcacccga atgctttggc ctttcaggtg agtgtggtgg aagcgagtgc      900
ttacaagcca aacacgagct ccggccaaac ccaatccact aa                         942
<212> Type : DNA
<211> Length : 942
      SequenceName : SEQ ID 695
      SequenceDescription :

Sequence
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<213> OrganismName : Mycoplasma pneumoniae
<400> PreSequenceString :
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gaaacaaaat accgagcagg gtatgataag ttcaagtatt acaaaaccca ctaccggggt      120
gcaaaaaaag ctggaaccaa tgatgatcga tggagatgaa ctgcttggtt tgaccttgac      180
tttgcccacc aaaagatagt gctcattgaa aggggtgaac ttcaccgtca agcagattta      240
aaaaaatctg accccgcaac aaacgaaact tccaaaaccg tttggggtag cattaaagaa      300
aagctgttac aaaacgtcaa caacctccac tcagagaaag gagtattctt atggttccgt      360
caatctggtt ttacaactac tagaaactag                                       390
<212> Type : DNA
<211> Length : 390
      SequenceName : SEQ ID 696
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atggctgaac cgttggccgt cgatcccacc ggcttgagcg cagcggccgc gaaattggcc       60
ggcctcgttt ttccgcagcc tccggcgccg atcgcggtca gcggaacgga ttcggtggta      120
gcagcaatca acgagaccat gccaagcatc gaatcgctgg tcagtgacgg gctgcccggc      180
gtgaaagccg ccctgactcg aacagcatcc aacatgaacg cggcggcgga cgtctatgcg      240
aagaccgatc agtcactggg aaccagtttg agccagtatg cattcggctc gtcgggcgaa      300
ggcctggctg gcgtcgcctc ggtcggtggt cagccaagtc aggctaccca gctgctgagc      360
acacccgtgt cacaggtcac gacccagctc ggcgagacgg ccgctgagct ggcaccccgt      420
gttgttgcga cggtgccgca actcgttcag ctggctccgc acgccgttca gatgtcgcaa      480
aacgcatccc ccatcgctca gacgatcagt caaaccgccc aacaggccgc ccagagcgcg      540
cagggcggca gcggcccaat gcccgcacag cttgccagcg ctgaaaaacc ggccaccgag      600
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caagcggagc cggtccacga agtgacaaac gacgatcagg gcgaccaggg cgacgtgcag      660
ccggccgagg tcgttgccgc ggcacgtgac gaaggcgccg gcgcatcacc gggccagcag      720
cccggcgggg gcgttcccgc gcaagccatg gataccggag ccggtgcccg cccagcggcg      780
agtccgctgg cggcccccgt cgatccgtcg actccggcac cctcaacaac cacaacgttg      840
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<212> Type : DNA
<211> Length : 843
      SequenceName : SEQ ID 697
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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catgtgcacg cctcgggccc taagtacatg ctggatatga catttcctgt cgactatccc      180
gaccagcagg cgctgaccga ctacatcacg caaaaccgcg acgggttcgt caacgtcgcg      240
caggggtccc cgctgcgaga ccagccctac caaatggacg ccaccagcga acagcacagc      300
tccggccagc cgccgcaggc cacccgcagc gtagtgctca aattcttcca ggacctcggt      360
ggggcacatc cgtccacctg gtacaaggcc ttcaactaca acctcgcgac ctcgcagccc      420
atcaccttcg acacgttgtt cgtgcccggc accacgccac tggacagcat ctaccccatc      480
gttcagcgcg agctggcacg tcagaccggt ttcggtgccg cgatattgcc ttcgaccggc      540
ctcgacccgg ctcactacca gaactttgct atcaccgacg acagtctgat tttctacttc      600
gcccagggtg agctgctgcc gtcgtttgtc ggcgcttgcc aagcccaggt gccgcgcagc      660
gccattccgc cgctggcaat ctaa                                             684
<212> Type : DNA
<211> Length : 684
      SequenceName : SEQ ID 698
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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gtcttcggcg cgccactgcc gttggacccg gcatccgccc ctgacgtccc gaccgccgcc      180
cagttgacca gcctgctcaa cagcctcgcc gatcccaacg tgtcgtttgc gaacaagggc      240
agtctggtcg agggcggcat cgggggcacc gaggcgcgca tcgccgacca caagctgaag      300
aaggccgccg agcacgggga tctgccgctg tcgttcagcg tgacgaacat ccagccggcg      360
gccgccggtt cggccaccgc cgacgtttcc gtctcgggtc cgaagctctc gtcgccggtc      420
acgcagaacg tcacgttcgt gaatcaaggc ggctggatgc tgtcacgcgc atcggcgatg      480
gagttgctgc aggccgcagg gaactga                                          507
<212> Type : DNA
<211> Length : 507
      SequenceName : SEQ ID 699
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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aacatcgcgg tggcagtgct cggcctggct gcgtacttcg ccagcttcgg cccaatgttc      180
accctcagta ccgaactcgg cggaggtgat ggcgcagtgt ccggtgacac tgggctgccg      240
gtcggggtgg ctctgctggc tgcgctgctt gccggggtgg ctctggtgcc taaggccaag      300
agccatgtga cggtagttgc ggtgctcggg gtactcggcg tatttctgat ggtctcggcg      360
acgtttaaca agcccagcgc ctattcgacc ggttgggcat tgtgggttgt gttggctttc      420
atcgtgttcc aggcggttgc ggcagtcctg gcgctcttgg tggagaccgg cgctatcacc      480
gcgccggcgc cgcggcccaa gttcgacccg tatggacagt acgggcggta cgggcagtac      540
gggcagtacg gggtgcagcc gggtgggtac tacggtcagc agggtgctca gcaggccgcg      600
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ggcggctatt cgtccagtcc gagccaatcg ggcagtggat acactgctca gcccccggcc      720
cagccgccgg cgcagtccgg gtcgcaacaa tcgcaccagg gcccatccac gccacctacc      780
ggctttccga gcttcagccc gccgccaccg gtcagtgccg ggacggggtc gcaggctggt      840
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tcggctccag tcaactattc aaacccccagc gggggcgagc agtcgtcgtc ccccgggggg   900
gcgccggtct aa                                                         912
<212> Type : DNA
<211> Length : 912
      SequenceName : SEQ ID 700
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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accaaactgc tcgtcggggc catcgcgggc ggaatgctag cttgcgcagc tatattgggc    180
gacggaatcg cttcggccga tactgcgttg atagtacccg gtaccgcacc gtccccgtac    240
gggccactca ggtcgctcta tcatttcaat cccgcgatgc agcctcagat cggcgcgaat    300
tactacaacc ccaccgctac ccgccacgtc gtttcatatc caggcagctt ttggcctgtc    360
acaggcttga attcgcccac cgtcggcagt tctgtcagtg ccgggacgaa caatctcgat    420
gcggcgatcc gcagcactga cggaccaatc ttcgtggccg ggttatcaca gggcacgctc    480
gtgcttgacc gcgagcaggc acggttagcg aatgacccga cggctcctcc ccctgggcaa    540
ctcacattca tcaaggccgg cgaccctaac aatcttcttt ggcgggcgtt taggccggga    600
acccacgtgc cgatcatcga ctacaccgtt ccggccccag cggaaagcca gtacgacaca    660
atcaatatcg tgggccagta cgacattttt tctgacccgc ctaatcgtcc gggcaaccta    720
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tcggacccag ctcgcgttgc gcctagggac attacgacga caacgaacag tttgggtgcg    840
acgaccacga cctacttcat ccggaccgat cagctacctc tggtgcgggc gctggtggac    900
atggcgggcc tgcccccgca ggcggcggga acagttgatg ccgcactgcg gcccataatt    960
gacagggctt atcagcccgg accagcaccc gctgtgaacc cgcgtgattt ggtccagggc   1020
atccgcggta tccccgccat cgcccctgcc atcgccatcc ctatcggcag caccaccggg   1080
gccagtgccg ccaccagcac cgctgccgcc acggcagcag caacaaatgc gctccgcggg   1140
gccaacgtgg gcccgggcgc caacaaggcg ttgtcgatgg tccggggttt gctacccaaa   1200
gggaagaagc actag                                                     1215
<212> Type : DNA
<211> Length : 1215
      SequenceName : SEQ ID 701
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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cccatcgagg atcttgacgt tctcgtagcc gcagctgtag ccgtcgcggc tggcagtttg    120
ggggtatcgg cggcgcagct cggcgagatc taccgccacg acgtggtcga cgaggcccaa    180
aaggcgccgc attgcccagc cgaatccgac cagacacccg ctggggccgc gggtgacggg    240
gatctccctg aggtcggagg acgggtcacc agcccgccac agccgccggt cgccgcgctc    300
accggctact ccgctaacat cggcggactc tccgtgccgc acagctggaa tcttccgcca    360
gcggtgcgcc aagttgcggc gatgttcccc ggcgcgactc cgatgtatat gacggggagt    420
tcggacggct cctacgccgg cctggcagcg gcgggtttgg ccggcaccgg tctggccggt    480
cttgccgccc gcggtggctc cgcgccgacc ccggctgcag ccgccccggc cggagccggc    540
ggagccggcc cggctgccac caggcccgcc gcccagcaga cgcccgcggt ccccgcggcg    600
gccgccgggt cagccatacc tggcctaccg cccggtttgc cgcccggcgt ggttgccaac    660
cttgcggcga ccctggcggc gatccccgga gcgaccatca tcgtggtacc gccgtccccg    720
aacgccaatc aatag                                                      735
<212> Type : DNA
<211> Length : 735
      SequenceName : SEQ ID 702
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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tcggctgcgc ccggcaccgt gatcgaccag ttcgtgctcg atgtggccga gcacccggtc    120
gaggtgttaa ccgagaccgt ggtgggcacg gatcggtcat tggccggcga aaaccaccgg    180
ctggtcgcta cccggctgtg ttggccggat caggccaaag ctgacgagct gcagcacgca    240
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ctgcaggact ccggggtcca cgacgttgcc gtgatatccg aggcgcaggc cgccacggcg      300
ctggtcgggg cggcacatgc cggctctgcc gtgctgttgg tgggtgatga gacggcaacc      360
ttatcggtgg ttggtgaccc ggacgcgccg ccgacgatgg tggccgtcgc gccggtggcg      420
ggcgccgacg ccacatcgac cgtcgatacc ctgatggccc ggctcggcga ccaggccctc      480
gccccggggg atgtcttcct ggtgggtagg tccgccgagc acaccacggt tcttgccgac      540
cagctgcgcg cggcgtcgac gatgcgcgtg cagactcccg acgaccccac gttcgcgctg      600
gcccgtggcg cggcgatggc ggccggcgcc gctacgatgg cgcacccggc cctggtcgcg      660
gatgcgacca cttcgctccc ccgggccgag gcggggcaat cgggttctga aggcgagcag      720
ctggcgtact cgcaggccag cgattacgag ctgcttccgg tcgacgaata tgaggaacac      780
gacgaatacg gggcagccgc ggatcgctcg gcgccgttga gccgacggtc gctgctgatc      840
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gatgatccca ccgctggatt ccagggcggc accattccgg ctgtacagaa cgtggtgccg     1080
cggccgggta cctcacccgg ggtgggtggg acgccggctt cgcctgcgcc ggaagcgccg     1140
gccgtgcccg gtgttgtgcc tgccccggtg ccaatcccgg tcccgatcat cattcccccg     1200
ttcccgggtt ggcagcctgg aatgccgacc atccccaccg caccgccgac gacgccggtg     1260
accacgtcgg cgacgacgcc gccgaccacg ccgccgacca cgccggtgac cacgccgcca     1320
acgacgccgc cgaccacgcc ggtgaccacg ccgccaacga cgccgccgac cacgccggtg     1380
accacgccac caacgaccgt cgccccgacg accgtcgccc cgacgacggt cgctccgacc     1440
accgtcgccc cgaccacggt cgctccagcc accgccacgc cgacgaccgt cgctccgcag     1500
ccgacgcagc agcccacgca acaaccaacc caacagatgc caacccagca gcagaccgtg     1560
gccccgcaga cggtggcgcc ggctccgcag ccgccgtccg gtggccgcaa cggcagcggc     1620
gggggcgact tattcggcgg gttctga                                         1647
<212> Type : DNA
<211> Length : 1647
      SequenceName : SEQ ID 703
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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tcaccagccg gtatcgccaa tgccgacgac gcgggcttgg acccaaacgc cgcagccggc      120
ccggatgccg tgggctttga cccgaacctg ccgccggccc cggacgctgc acccgtcgat      180
actccgccgg ctccggagga cgcgggcttt gatcccaacc tcccccgcc gctggccccg       240
gacttcctgt ccccgcctgc ggaggaagcg cctcccgtgc ccgtggccta cagcgtgaac      300
tgggacgcga tcgcgcagtg cgagtccggt ggaaactggt cgatcaacac cggtaacggt      360
tactacggcg gcctgcggtt caccgccggc acctggcgtg ccaacggtgg ctcggggtcc      420
gcggccaacg cgagccggga ggagcagatc cgggtggctg agaacgtgct gcgttcgcag      480
ggtatccgcg cctggccggt ctgcggccgc cgcggctga                             519
<212> Type : DNA
<211> Length : 519
      SequenceName : SEQ ID 704
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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cccacctcgg cggccgggag caacaccgcc accaccctgt tcccggtcga cgaggtcacc      120
cagctggaga cgcacacctt cctcgattgc caccccaacg gcagctgcga cttcgtcgct      180
ggagcaaatc tgcgcacacc cgacggcccg acgggctttc cgcccgggct gtgggcgcgc      240
caaaccaccg agatccgttc gacgaaccgg ttggcctatc tggacgcgca cgccaccagc      300
cagttcgaac gggtaatgaa ggcgggcgga tccgacgtga tcaccaccgt ctacttcggc      360
gagggtccgc cggacaaata ccagaccacc ggggtcatcg actcgaccaa ttggtcgacc      420
ggtcaaccga tgaccgacgt caacgtcatc gtgtgtacac acatgcaggt ggtctacccg      480
ggggtcaacc tcacctcgcc cagcacctgc gcgcaagcca acttttccta g               531

<212> Type : DNA
<211> Length : 531
      SequenceName : SEQ ID 705
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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atcgtatgca cggtgttcat cgaaaccgcc gttgtcgcga ccatgtttgt cgcgttgttg     120
ggtctgtcca ccatcagctc gaaagccgac gacatcgatt gggacgccat cgcgcaatgc     180
gaatccggcg gcaattgggc ggccaacacc ggtaacgggt tatacggtgg tctgcagatc     240
agccaggcga cgtgggattc caacggtggt gtcgggtcgc cggcggccgc gagtccccag     300
caacagatcg aggtcgcaga caacattatg aaaacccaag gcccgggtgc gtggccgaaa     360
tgtagttctt gtagtcaggg agacgcaccg ctgggctcgc tcacccacat cctgacgttc     420
ctcgcggccg agactggagg ttgttcgggg agcagggacg attga                     465
<212> Type : DNA
<211> Length : 465
      SequenceName : SEQ ID 706
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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atgggcccac tcacgcagct tccccagcag gccatgcaag cggggcaggg agcaatgcag     120
ccgctgatga gtgcgcttca acagacctat ggcgcggagg gactggacgt cgcggacggg     180
gcgcggctgg tggacagcat cgaaggtgag cccggcctcg gcggcgagcc gggcgctggt     240
gacgtcggcg ccggcggcgg gggtggtggc accaccccga cgggctatct gggtccccca     300
cccgtgccga cgtcgtcgcc accgacgact ccagccgggg cgccggccaa gtcggtgacg     360
ccggacccgg ttagtggcac cccgcgggcg tcggggccgg ccggcatgac cggcatgccg     420
atggtgccgc cgggcgcgtt gggtgcgggc gcggaaggag ccaataagga caagccggtc     480
gagaagcggg tgacgggctg tgccgaatgg tcaaccggtc aagggccgct taacagtacc     540
gccgagtgtt ccggtgaaat ctgccgacga caagccggtg gtcaccaagt cgacgcgacg     600
gatccttgtt gtgccgaacg acgacaaggt taa                                 633
<212> Type : DNA
<211> Length : 633
      SequenceName : SEQ ID 707
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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gtcgcgggcg cagacccgca gcgttatgac ggcgatgtgc cggggatgaa ctatgacgct     120
tcgctgggcg ccccatgctc cagctgggag cgcttcattt ttggacgagg cccctccggt     180
caggccgaag cctgtcattt tccgcctcct aaccagttcc cgccggccga aaccggctac     240
tgggtgatct cctacccgct atacggcgtc cagcaggtcg gtgcgccgtg tccgaagccg     300
caggcggccg cgcagtctcc ggatgggttg ccgatgctgt gtctgggagc ccgtggatgg     360
cagccgggat ggtttaccgg ggccgggttc ttccctccgg agccataa                  408
<212> Type : DNA
<211> Length : 408
      SequenceName : SEQ ID 708
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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accgtgatga tcatcgtggt gttcgggcag gtgcggttcc atcacaccac cgggtactcc     120
gcggtgttca cccatgtcag cgggctgcgg gccgggcaat ttgtccgcgc tgcgggcgta     180
gaggtcggca aggtcgccaa ggtaacgctg atcgacgggg acaagcaagt attggtggac     240
ttcaccgtgg atcgctcgct gtcactggat caggcgacga ccgcctcgat ccgctacctc     300
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aagctagagg tgctgatcac tggactgaag aacagggcgg acccgctggc cgcggcggcg 720
gcacacatca gcagcgccgc gggaacccta gccgacctgc tggggcggat cgtccattgc 780
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<212> Type : DNA
<211> Length : 828
SequenceName : SEQ ID 709
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
atgactccac gcagccttgt tcgcatcgtt ggtgtcgtgg ttgcgacgac cttggcgctg 60
gtgagcgcac ccgccggcgg tcgtgccgcg catgcggatc cgtgttcgga catcgcggtc 120
gttttcgctc gcggcacgca tcaggcttct ggtcttggcg acgtcggtga ggcgttcgtc 180
gactcgctta cctcgcaagt tggcgggcgg tcgattgggg tctacgcggt gaactaccca 240
gcaagcgacg actaccgcgc gagcgcgtca aacggttccg atgatgcgag cgcccacatc 300
cagcgcaccg tcgccagctg cccgaacacc aggattgtgc ttggtggcta ttcgcagggt 360
gcgacggtca tcgatttgtc cacctcggcg atgccgcccg cggtggcaga tcatgtcgcc 420
gctgtcgccc ttttcggcga gccatccagt ggtttctcca gcatgttgtg gggcggcggg 480
tcgttgccga caatcggtcc gctgtatagc tctaagacca taaacttgtg tgctcccgac 540
gatccaatat gcaccggagg cggcaatatt atggcgcatg tttcgtatgt tcagtcgggg 600
atgacaagcc aggcggcgac attcgcggcg aacaggctcg atcacgccgg atga 654

<212> Type : DNA
<211> Length : 654
SequenceName : SEQ ID 710
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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attgctcttg caacgctgtt gacgcttatc aatcaagtcg tcggcactcc gtatattccc 120
ggtggcgatt ctcccgccgg gaccgactgc tcggagctgg cttcgtgggt atcgaatgcg 180
gcgacggcca ggccggtttt cggagatagg ttcaacaccg gcaacgagga agccgccttg 240
gcggctcggg gctttcaaca gggaaccgcc cccaatgcct tggtgatcgg ttggaatggc 300
caccacacgg cggtgacgct gcccgatggc acgcccgtat ccagtggtga aggcggtggc 360
gtgcgggtcg gtggcggtgg cgcctaccag cccaaattca cccaccacat gtatctgccg 420
atggatgtgg acgcgggaga agaccagccg ccggcgccag atgagccggt caccgcggtc 480
gacgacgtgg aaccggaaat gcctgcaccg tgcccgaccc agcgcccgcc ggtgaccccg 540
agacataacc tgtgcaacaa actccggact atgccagggg cgctctcggc cgcgctggcc 600
gcggcggcgc cggtctggcc ggcccctata agcggctgcc gcgggttcag cacgtccctc 660
ttagcaaaaa gaaatcaccc agtaatcgtc gggaaatag 699
<212> Type : DNA
<211> Length : 699
SequenceName : SEQ ID 711
SequenceDescription :

Sequence

<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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gcaattgcct actccggcaa cggctcgtgg ggccgatcgt gggactaccc aacccgggcg 180
gctgccgaag ccaccgccgt caagtcgtgt ggctactccg actgcaaggt gctcaccagt 240
ttcaccgcct gcggcgccgt cgccgccaac gatagggcat accagggagg agttggaccc 300
accttggccg ccgccatgaa ggacgccctg accaagctcg gcggcggcta catcgacacc 360
tgggcctgca actaa 375
<212> Type : DNA
<211> Length : 375
SequenceName : SEQ ID 712
SequenceDescription :

Sequence

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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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gcattgatag ttgccatcct cggactcgcc atcaccccgg tcgctagtgc ggcgacggcc     120
agggcgacgt tgtcggtgac atcgacgtgg cagaccggtt tcatcgcccg cttcaccatc     180
acaaactcga gcacggcgcc gctaaccgat tggaagcttg aattcgactt gccggcagga     240
gaatccgtct tgcacacatg gaatagcacc gttgcacgat ctggcacgca ctacgttctc     300
agcccagcga attggaatcg catcattgcc cccggtggtt cagccacggg cggcctaaga     360
ggcgggctga ccggttctta ctcgccgccg tcgagttgtc tgctcaacgg gcaatatcct     420
tgcacctag                                                             429
<212> Type : DNA
<211> Length : 429
      SequenceName : SEQ ID 713
      SequenceDescription :

Sequence
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<213> OrganismName : Mycobacterium tuberculosis H37Rv
<400> PreSequenceString :
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gtggtggtcc ttggttggta tttcctgcgg atacccagcc tggtcggcat cggtcgatac     120
acgctttatg ccgaattgcc tcggtccggg ggtctatacc gaacagccaa cgtcacatat     180
cggggcatca ccatagggaa ggtcaccggc gtcgaaccaa ccgagcgggg cgcgcgagca     240
accatgagca tcgacaatgg ctaccagatc cccaccgacg cctcggccaa tgtgcactca     300
gtgtcggcgg tcggcgagca gttcgttgac ctggtgtcga cccgcaccag cggtccgtat     360
ctgcggcatg ggcagacgat caccacgact acggtcccca gccagattgg cccggcgctg     420
gacgccgcca accgtggatt ggcagtgctg cccaaagacc gggtcgcgtc ggtgctgcac     480
gaggcgtcgg aggccgtggg cgggctggga tcctcactga atcgcctcat cgaagccacc     540
caggcaatcg cccacgatgt caggggcagc ctcgaggaca tcgacgacat catcgagcgt     600
tcggcgccta tcatcgatag ccaggtcaat tccggcaacg agatcgcccg ctgggccgcc     660
aacctcaaca cgctggccgc tcagaccgcg cagaccgatc cggcggtgcg aagcattctg     720
gccaacgcgg caccgactgc cgatcaggtc aacgccacgt tcagcgacgt gcgggagtcg     780
ttgccgcaga cgctggccaa tctcgaggtc gtaatcgata tgctcaagcg ctaccacaac     840
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ccgtgcctga ccggcttcct gccggcgtcg gagtggcggt cacctgctga caccagcacc    1020
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ggagcacgca acaacccgtg tgtagacgtg cccggcaagc gggcggcgac cccgcgggaa    1140
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aatgggcaac aacccaaccc gtgcgtctac accccgagca catttcctac aaccatttac    1440
gacgtgcaga gcggcaaagt cgtagcaccc gacggtgtgg tgtattccgt tgaggcttcg    1500
actcatgccg gagccgacgg atggaaggtg atgctggcac caaccggctg a             1551

<212> Type : DNA
<211> Length : 1551
      SequenceName : SEQ ID 714
      SequenceDescription :

Sequence
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<213> OrganismName : Rickettsia prowazekii strain Madrid E
<400> PreSequenceString :
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atgagttcta taaaaaatac cactaatcta gatctttcat ctatcaccaa tacaattcaa     120
aaagccatga atattttttt taccactaac aaaatttcca cagaaagtat gcaatctttg     180
tttaagaaaa attccgagat tatacaaaat aatattaata ctattttaaa tagtactaaa     240
gaagtaataa attctaaaga ttttaaacaa gctactgaat atcatcaaaa atgtgtaaaa     300
tctatttatg aaacatctat ggacaatgct aaggaattag caaatattgc ttatgaagct     360
tcaaataaaa tatttgaagc cgcaaataaa catattacca agaatattca taatgcttct     420
aataatatac ataatactgc agaacaagta caaaaaaact ttaataacaa atctgcttaa     480

<212> Type : DNA
<211> Length : 480
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      SequenceName : SEQ ID 715
      SequenceDescription :

Sequence
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<213> OrganismName : Rickettsia prowazekii strain Madrid E
<400> PreSequenceString :
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gatttaaatc atattcaaga tagttttaaa tatcaagaag cagagcagtt aacaatagaa     120
ttaccttgga atgactgtac tgcaattcat aaattcttag aagaaaagtt atttttttca     180
gaacaacaaa taaaaaaaga aaataaaatt catgagaaat ataagcaatt ttatttacaa     240
cataataata agctttctga tttttctatg caatttctag aaaaaaaatc tgaaattaat     300
agtgtcgaaa ctttaatatc aggcttttta aaattttgtg aagataattt tcaaacaagt     360
aaaagtaaat cgcattcttt aaattttttc caaaaacaac aagaccaatg gttacataat     420
ataagaaatg agaattataa aacatattat aagaagaaat atgaagacaa tacctttaga     480
aatattaatt aa                                                         492
<212> Type : DNA
<211> Length : 492
      SequenceName : SEQ ID 716
      SequenceDescription :

Sequence
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<213> OrganismName : Rickettsia prowazekii strain Madrid E
<400> PreSequenceString :
atgaaaaagt tacttttaat tgctactgca agtgcaacaa ttttatcttc tagtgtatcg      60
tttgcagagt gcattgataa tgaatggtat ttaagagcag atgcaggtgt agcaatgttt     120
aataaagaac aagataaggc aacaggtgtt aaattaaaat ctaataaggc tattccaatt     180
gatttgggta ttggttatta tatttctgaa aatgtacgtg ctgatttaac tttaggaact     240
acaataggtg gaaaactcaa gaaatacgga gcagcaacta atacacattt tactggtact     300
aacgtttcag tgagccataa gcctactgtt acacgtttgc ttattaacgg ttatgtagac     360
ttaacaagtt ttgatatgtt tgatgttttc gttggtggtg gtgtcggtcc tgcattagtg     420
aaagagaaaa ttagtggggt aagcggtctt gcatctaaca ctaaaaataa aaccaatgta     480
tcatataagc tgattttcgg tacttctgcg caaattgcag atggtgttaa agtagagcta     540
gcatatagct ggataaatga tggtaaaaca aaaactcata atgtaatgta caaaggggca     600
agtgtgcaaa ccggtggtat gcgttatcaa agtcataacc tgacagtagg tgtaagattt     660
ggtatataa                                                             669
<212> Type : DNA
<211> Length : 669
      SequenceName : SEQ ID 717
      SequenceDescription :

Sequence
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<213> OrganismName : Rickettsia prowazekii strain Madrid E
<400> PreSequenceString :
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agtactataa ttcgagatta tataatatcg caaaattcta aaaatcttaa agtgaacctt     180
aaagaaaagt ttggttccaa tttaaaagga gtaaaattaa taggaataaa gttaacaaat     240
gaagatttat cgggaataga tttcacttca tgcgaaatat tacggactga cttcatgggt     300
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tcagtaataa aaaatatttc aggctataat gctgattttc aaggttcaat ttttaataat     420
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agtactataa tcaatgtcaa ttttgaaaat tctaaattta gtaatgtatt atggtgtcac     540
agtaatattg acagtagtaa ttttcaaaaa actcatctaa aaaataatag ctttaaaaat     600
actaatgtaa tgaattcaat attttatggt gcagatttag gcaaaagtgt aataaataat     660
acaaatttta ctaataatta ttttgaatct agtgacctaa gtaacactaa attcacatca     720
gtaatcatta aagattctaa cttcacacaa agtattttta attcagtaaa tttcaataat     780
atacaaagta ataactcttt tttttcatat acttcctttg aagattcaac attacacaat     840
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tttaaaatcg acaatgctat attaacaaat atgagtctca acgataatac atttaataat     960
ttatcaataa aaaatagtaa tactaatttt gtaaggatta ataaatccaa agggtttaat    1020
attactttac tcaatactaa ctatagtaat gctattttta gcaataatga tttaaaagaa    1080
tttaaagtca ttaatactga tttaaacaac agtgaaataa taaactcaaa tttcactaat    1140
ggacaattta ataatgtaaa tttttctcaa tctttaatac aaaacgtaaa ttttacagac    1200
gtgaaaatta ctttaggcaa tttaaatcaa gtagctctaa taaattccaa tctaataaac    1260
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actaatatta ttaactcagt cctttctaat tcacaaataa ataatattaa ctaccaagca   1320
tattatagtt ttatcaatac taatgtttct aataatattg ttataaatga taattcgaat   1380
caaattccac caaataatat agtaatcaat tctgaaaaag atttacaaaa catatctaat   1440
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ttttcaaaaa gcatctttaa aaaagctaat ttaacaaata cagtaataaa aaattctatt   1560
ttaaaagatg ctaatttttc tgcagcaata cttactaaaa cagatttctc aaaatcgata   1620
ttaacaggta gtatatttaa gtttgctcaa attgatcaga catgttttag taattccgac   1680
ttaacaaata ctgattttac tgaagcaaca attaaaaata ctgcatttga taatgctaat   1740
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<212> Type : DNA
<211> Length : 1767
      SequenceName : SEQ ID 718
      SequenceDescription :

Sequence
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<213> OrganismName : Porphyromonas gingivalis W83
<400> PreSequenceString :
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atgatgtgct ctctgcattt aggtctacaa tctcagactt ggcatggaga tccggactca   120
gtggcagccc taccttctat cggtattcaa gagtcaagtt gtacccgaat cacgttcgag   180
gttgttttcc ccggatttta tagtgtggaa aaacgagaag gcaaccaagt ctttcagcgc   240
atttccatgc cgggttgtgg ctcgtttggg aatctgggcg aagctgaatt gcctgttttg   300
aaaaagatga tagccgttcc ggaattttca acagctaacg ttgctgtaaa aatcaaagag   360
acggagacat tcgacaatta taatatctat cctaatccta cctatgtcgt agaggagttg   420
cctgaggggg ggacttatct ggtagaggct ttcgcgataa acaatgacta ttatagccaa   480
aatgtaagcc tcccttctac tcactatgtc tattctcaag acgggtattt tcgctcacaa   540
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tttgcaaaaa aaatcgaggt tacaataact ttcgataatc ctcagccacc tttacaaaaa   660
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cctattgcac acaaaaatat tctttacgca gaagggaaag gctgcgatgc tccaatctta  1380
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<212> Type : DNA
<211> Length : 3885
      SequenceName : SEQ ID 719
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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ccctcttttt ctgacggaga tgatacattt attgttactg cgggtaatca cgcagtcggc     180
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<212> Type : DNA
<211> Length : 2322
      SequenceName : SEQ ID 720
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          SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
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gattacgata ccgatgttta cccagtaccg gtaatcaact atgaaggcga taacttctgg     180
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accgcttact ggtcgccgct ttacttcaaa gcgaaagaca gtggcgatca ccaaatgcgt     300
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tacggttacc tgcgtaccac cctggctggc gataccctgg ataacagcaa cggcattgtc     420
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<212> Type : DNA
<211> Length : 747
          SequenceName : SEQ ID 721
          SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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actgaatcga cgggcctggc tttaagcggt aactggacac ataacgacga cgacggtgac     180
gtcgcgggcg tggggctggg gttgaatctg cctctcgggc cgttaatggc gaccgttggc     240
ggaaaaggcg tgtacaccaa cccgaattac ggcgatgaag gttatgccgc agcggtagga     300
ggtggtttgc agtggaaaat tggcaacagc ttccgtttgt ttggcgagta ttactactct     360
ccggattcgc tctccagcgg tattcaaagt tatgaggaag cgaatgctgg cgcgcgttac     420
accattatgc gtccagtcag tattgaggcg ggttatcgct acctgaatct gtcgggtaaa     480
gacggtaacc gcgacaacgc tgtggctgac ggcctgtatg ttggggttaa cgccagtttc     540
tga                                                                   543
<212> Type : DNA
<211> Length : 543
          SequenceName : SEQ ID 722
          SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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ataatggcgc ttgctatcat gatggcttca tttgccgcaa acgcgtctgt attaccggaa     180
actcctgtgc catttaaaag tggtaccgga gcaattgata acgacactgt ctacattggt     240
ttaggtagcg caggtacagc atggtacaag ctagatacac aggccaaaga taaaaaatgg     300
actgcgttag ctgcattccc tggtggaccg agagagcaag caacctctgc atttattgat     360
ggcaatctgt atgtgtttgg cggcattggc aaaaacagcg agggattgac tcaggtattt     420
aatgacgtac acaaatacaa ccccaaaacc aatagctggg ttaaattgat gtcgcacgcg     480
ccgatgggca tggcgggtca tgtgactttt gtacacaacg gcaaggctta tgttactggc     540
ggtgttaacc agaatatctt caatggctat tttgaagatc tcaacgaggc tggaaaagat     600
tcaaccgcta tagataaaat caacgcccac tattttgaca aaaaagcaga agattatttc     660
ttcaataagt ttctgttgtc ttttgatccc tcaacacagc aatggagtta cgctggcgaa     720
tcgccctggt acggaacggc tggtgcggcg gttgtgaata aaggtgataa aacctggctt     780
attaatggcg aagccaaacc aggattgcga acggatgccg tatttgaact tgatttcacc     840
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ggtcgggcct acggagtatc attgccctgg aataatagtt tattaattat tggcggtgaa    1140
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acagtacaaa actaa                                                    1215
<212> Type : DNA
<211> Length : 1215
      SequenceName : SEQ ID 723
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gccggaggtg caagtgcact ccaagcggct tttcagaaag catcagcgag tatggaaacc    120
ggcggtgaca tgtccagcat ggggtcagtt gtcagcagtg gcggaaacgg tggtggtgaa    180
gcgggtactg ctggcagtag cccattcgcc caagcggctg gctttggtga cagcggcagt    240
agctcaagcg gtggcggctt tgccaaggcc gcgaagctgg ccacaggcac ggcctccgag    300
ttagccaagg gtgtcggctc tcaagtgaag cagggattcc aggagcgagt gagcgaaacc    360
acaggcggaa aactggctgc ttcgatacgc gaaagcatgg agccgaaaga agcaagccaa    420
tctggccagt tcgagggcaa tagcttgggc gccgattctg gcccagatag taacgaagtc    480
aggagttag                                                            489
<212> Type : DNA
<211> Length : 489
      SequenceName : SEQ ID 724
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gatgacaaaa acatgtacat gtattttttt gaagagatga cggtctatgc tcctgtccct    120
gtacccgtaa acggcaacac gcattacacc agtgaaagca tcgagcgttt accgaccggg    180
aatggcaata tcagcgatct gctgagaacc aaccctgcgg tacgcatgga ttcaacgcaa    240
agtacctcgt tgaaccaggg agatattcgc cctgagaaaa tctctattca cggtgcgtcg    300
ccctaccaga atgcctattt gattgacggt attagtgcaa ctaataacct gaacccagcg    360
aatgagtccg atgccagtag tgcaaccaat attagcggga tgtcacaggg gtattatctt    420
gatgtcagct tactggacaa tgtgacgctt tatgacagtt ttgtgccggt tgaatttggt    480
cgcttcaatg gcggggtaat tgatgcaaag atcaaacgct tcaacgctga tgatagcaag    540
gtgaaattgg gttatcgcac tacgcgtttg gactggttaa catcgcatat cgatgagaat    600
aacaagagcg catttaatca aggttcttca ggaagtacct atttctctcc agattttaaa    660
aagaactttt ataccttgtc gtttaatcag gagctggctg ataactttgg cgttaccgcc    720
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tataatacca gcaccttccc gcagtctgat cgcgaaatgg gtaataaatc ctatggtctg    960
gcatgggata tggatacgca actcgcatgg gccaaactac gtaccaccgt tggttgggat   1020
catattagtg attataccccg tcacgatcat gacatctggt acaccgaact ttcatgtaca   1080
tatggtgata ttacagggcg ttgtacccgt ggcggattag gacacatttc ccaggctgta   1140
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cagtctgaat cctatgtgat taatgctgca ggaaagaaaa ctaaccatac catttaccat   1320
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tggcggaatg tgtcgttaat gcccggtgtg cgttatgact atgacaacta tctgtcaaac   1440
cacaatatct ccccgcgctt tatgacggaa tgggatattt ttgctgatca aacctcaatg   1500
attaccgccg gttataaccg ttactatggc gggaatattc ttgatatggg attacgtgat   1560
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gttattgcac gcgcaagtga agcgcatgat caaatcagca aaagcagtcg taccgacagc   1740
gcgactaaaa ccaccattac tgaatataac aacgatggca aaaccaaaac gcattcgttt   1800
aacctcagtt ttgaactggc cgaacccctg catatccgcc aggtagatat taacccgcaa   1860
attgtcttta gctatatcaa gagcaagggc aacttgtcgt taaacaatgg ttatgaggag   1920
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ccagtggcag attttaataa cccattaaag atctccttaa acatggattt cacgcatcaa   2040
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gacgaaaaac tggatagcag cctgacctgg gacacccgct tgtcctggac gccacaattt   2220
ctgaaacaac aaaacctgac gatcagtgcc gatattctca atgtactgga tagcaaaacc   2280
gctgttgata caacgaacac cggtgtggcg acctacgcca gtggccgtac tttctggctt   2340
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gatgtcagca tgaaatttta a                                            2361
<212> Type : DNA
<211> Length : 2361
      SequenceName : SEQ ID 725
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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actttagtaa gccagggtac tgaagcgtca gctaatctta ctttgaccaa gcctatcgtt     120
gttaataata ccattcaacc agtgaaaggg gtatatagcg gtacgttaac tgcatggacg     180
cctttggcaa caggtattgt tggcgcatct gatgggcaga gccacgacta tgctgtaact     240
ttcccggatg atatttatgc ggagagcagt acttcagcgg atgcagtaat ttctggtgac     300
aataacccgg accataaact gaaagtttcc ctgacaacgc ttgagcagga tcctccttca     360
gctgcctccg aagagattgg cggtaagcgt tatatgatgc tgaaaaatac tggaacaggt     420
ggtgcctatc gcgtcgtttc ccatatgaaa gaacaggttg ttgagccaga ctcttacacc     480
atccgtaccc aggcttatat ctacgcagaa taa                                  513
<212> Type : DNA
<211> Length : 513
      SequenceName : SEQ ID 726
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gcatcgttcc gcaaaaactg gagcgcacgc catctgacac cagtcgctct cgcggttgcc     120
actgttttta tgctggctgg ctgtgaaaag agtgatgaaa cagtgtctct ctatcaaaat     180
gctgacgact gttcagctgc aaacccaggc aaaagcgccg aatgtaccac cgcgtacaac     240
aatgcgctga aagaagccga acgtactgcg ccgaaatacg ccacccgtga agactgtgtt     300
gctgaatttg gtgaaggtca gtgtcagcaa gcaccagccc aggctggcat ggcaccagaa     360
aaccaggcgc aggctcagca atccagcggg agtttctgga tgccgctgat ggccggttac     420
atgatggggc gtctgatggg cggcggcgcg ggatttgcac agcagccgct gttctcctcg     480
aaaaacccgg ccagtccggc ttacggtaaa tataccgacg cgacgggtaa aaactatggc     540
gcagcccagc caggccgcac catgaccgta ccgaagacgg caatggcacc aaaaccggcg     600
accaccacta ccgttacccg tggcggtttt ggtgaatctg ttgccaaaca aagcactatg     660
cagcgtagcg caaccggcac ctcttctcgt tcaatgggtg gctga                     705
<212> Type : DNA
<211> Length : 705
      SequenceName : SEQ ID 727
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gagccacaac agcctgtccc cacagtgccc tcggtgccga cgatcccgca gcagccaggc     180
ccaattgagc acgaagatcg aacggcaccg cctgcgccgc atattcgcca ttatgactgg     240
aatggcgcaa tgcagccgat ggtcagtaag atgcttgggg ctgacggggt gactgcgggt     300
agcgtcctgc tggttgatag cgttaacaac cgtactaacg gttcgctgaa tgccgcagaa     360
gcgaccgaaa cgctgcgaaa tgcgctggct aataacggga aatttaccct ggtttccgcc     420
cagcaactgt cgatggctaa gcaacagtta ggtttgtcgc cgcaggacag tttaggcacc     480
cgtagtaaag ccataggcat tgcccgcaat gtcggcgctc attacgtgct gtactcctgc     540
gcctctggca acgttaacgc tccgacccta caaatgcagc tgatgctggt gcagacgggc     600
gaaattatct ggtcaggtaa aggtgccgtt tcgcagcaat aa                        642
<212> Type : DNA
<211> Length : 642
      SequenceName : SEQ ID 728
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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cgtgatggta gcacaacgtc tcttgaatgt acgtcgacgt taacaagaaa tgctaaaaca     180
gatcattctt tatactactc tgctaacctt tcagtcattt taaaaaaaga tggtagcggt     240
agttttacga ttgttggctt aactgatgaa gatacaccga ggaaattttc ccattcgtat     300
ttttttacct acaaaaataga tagtaacgga cggatctcag gtaatgctaa ggccaaagtt     360
tcgggactgg aaaatcagat aaaggatgag aacttcagac tcaattttct cgatgcatct     420
ttaacaggta aaggcaatgc gaggctaagc aagtttaata atgtctatat ttttagtatc     480
ccggggttga tcattaacac atgtgctcca atataa                               516
<212> Type : DNA
<211> Length : 516
      SequenceName : SEQ ID 729
      SequenceDescription :

Sequence
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<213> OrganismName : Shigella flexneri 2a str. 2457T
<400> PreSequenceString :
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gtcatcgcca ccagtgcaat ggcgcaggat gatttaacca ttagcagcct tgcaaagggc     120
gaaaccacca aagctgcgtt taatcagatg gtgcaagggc ataagctacc tgcatgggtg     180
atgaaaggcg gtacttatac tcccgcacaa accgtaacgt tgggagatga gacgtatcag     240
gtgatgagcg cgtgcaaacc gcatgactgt ggctcgcaac gtatcgctgt gatgtggtcc     300
gagaaatcta atcagatgac ggggctgttc tcggctattg atgagaaaac gtcgcaagag     360
aaactcacct ggctgaatgt gaacgatgcg ctttcgattg atggtaaaac ggtgctgttc     420
gcggcgttga ccggcagcct ggaaaaccat ccggatggct ttaattttaa ataa           474

<212> Type : DNA
<211> Length : 474
      SequenceName : SEQ ID 730
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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gttttaggaa ataaaatggc tgatgcagac acttatactc ttcaagaagg agattctttt     120
ttcagtgttg ctcaacgata tcatatggat gcttatgagt tagcttctat gaatggaaaa     180
gatattacca gtctgatttt gccgggtcag actttaactg ttaatggttc ggcagcaccg     240
gataatcagg cggcagcgcc aactgacact acgcaagcaa ccactgaaac gaatgatgcg     300
aatgccaata cttatcctgt tggtcaatgt acttgggggg ttaaagctgt tgcaacttgg     360
gcaggcgact ggtggggcaa tggcggtgat tgggcctcta gtgcttctgc acaaggttac     420
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catgttgcct atgtcacagc tgttggtgaa gatggtaaag ttcaagtact ggaatccaat     540
tataaagatc aacaatgggt tgataactat cgtggttggt ttgatccaaa taatagtgga     600
acaccaggca gtgtcagtta tatttatcct aactaa                               636
<212> Type : DNA
<211> Length : 636
      SequenceName : SEQ ID 731
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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attgcaacag cagctagttt aattttacct atggcagtac aggcagaaac tacttatact     120
gtgaaatcag gagatacttt atcagagatt gcttcaacac acggaacaac tgttgataaa     180
cttgctaagt taaataaaat taataatatc catcttatcc atgctggtca aattttagaa     240
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accagtcaaa cgagtgaggc gacgacttca gctccagtgg aaactagtca gacaagcgaa     540
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gcaacgacag cggaaccaac tgagaccaag accagccaaa caaatgaagt agcagcttca      600
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tatggacgtt atcaattgag tgattcttac ttgaatggtg atttgtcaga agaaaatcaa      780
gaacgtgtag cagatgctta tgtatcaagt cgttatggtt catggactgc tgctcaagct      840
ttctggaatg ctaatggttg gtattaa                                          867
<212> Type : DNA
<211> Length : 867
      SequenceName : SEQ ID 732
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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acaggtggag ctactgatgg tgaaattata gctaatcgga tgttacaagg taaagctact      120
aagggcgaaa ttactatgta tacttggaac attattcaaa atggctgggt gaattcactc      180
gtgtcttggg gtattggtgg ttataatagt tctataggat actcagctca aggtaataga      240
ggatttagta attatccata cgatgtttct atggattcag ataatagcag tagttcaagt      300
aatacgacag gtggttatgt taattataac cagagtttta attctggatg gtaa            354

<212> Type : DNA
<211> Length : 354
      SequenceName : SEQ ID 733
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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actacctcaa ccttacctag tataagtatt ctagctgagg acagtactgg agcacctgct      120
aggccagatg gacaagctcc tgctggaggt ggtgctaaca ccacaactta tgattacagc      180
ggaatcaaca gtggtgttct agttgctaat ggtagcaagg tcacttccag ttccaaaacc      240
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ggggcaacag ttaactttac tggccataag cagacactta aaggggatgt tgatgtggat     1140
agtatttcga ccttaaatat gtacctgctt gataaaacca actacactgg caaaactgct     1200
gtatcaacca acagtaccaa tatatcccca agcacgtctc ctattaccat gaatatttct     1260
aaaaattcca aatgggtgct aactggtcat tcgacagtaa ccaatctcaa tgctgaaaaa     1320
ggtgctaaaa ttgttgataa agacggaaaa accgtcagcg tcatctcttc aagcggacaa     1380
aaacttgtta aaggtaaaag caaatatagc ctaacagtca caggaactta cagtcaaaag     1440
gtaacaacca gctcaagtaa caaacccagc agcagttaca ttaaccgtag tgacttcgat     1500
aattatttta aaacaacaac agcctttgta aataatacca aaaatacaag taattaa        1557

<212> Type : DNA
<211> Length : 1557
      SequenceName : SEQ ID 734
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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gatgttgtag ataaaactgg aattgctcct cactatatac tggcaatgga gttagatcaa     120
cttaaattat taccagaagg caaaacaaat gagtatttag aaaaatatgc tcatgctgtt     180
ggcttagatc cggtttctat tattcatggt tatcgcaatc aggaaatgag cgatgaactt     240
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gaaggaaaat caattgaaga acctcaagag ttagctattg atagtttgga tgttactcaa     360
aatattacag aagagactcc ccaaatagaa gattttaagg ttgaatcaga ggaggcaagt     420
aaaaaaatag aaaaaatacc atctcgactt agtaaatatg attatgatga agaaccgaaa     480
aagaaatttc catgggcttt aattctgcta attttacttg ctttaactat tatcagttat     540
gttggatatg tggtttataa tcagctgcaa actgattcaa ataagactga attaagtacc     600
tctacgaaaa aatctaagga tactaaaaat gatgccaatt caacgacaca aagtcagacc     660
agcataacaa cagactttgc tgatggtgga aataatatca ccttaagtaa tactaatgga     720
aaagtagagg ttacctttac tttgacaggg gatgaggaaa gttgggtttc agcaactaac     780
actactgatg gagaatctgg aacaactcta acagcaacag ataaaactta tactgttact     840
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acgatcaatg gtcaaaaggt ggatactaca aaccttgtta atgctggttt gactaatatt     960
aatttgacag tccaataa                                                   978
<212> Type : DNA
<211> Length : 978
      SequenceName : SEQ ID 735
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
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gctaagagtc ttcatcttga aaaaatcaat aaatcgataa ctatttcgct tccttttggt     180
aaaaaaaaga tggaacaaac agcacgttac tattcaggtg aacaggttca gatcagttcc     240
tcagctaaaa aagacagtct tggaaaaggg ctgtctcatt accaaaattg gattgggaca     300
gttaaaaaga taaaatcaca aaaagacagt cgtcaaaagc atcattatag ttatgaagtt     360
acatttgata atggcaaagc tttgaaatat gttcaggaaa aagacttagt taaaacaaaa     420
agatctaaat acagcaaagg tcaaattgtc aaattaaaat cctctgcgac agctgattta     480
gatggcagca gtttaacgga ttatcgtgca tcagctggta aaatcgatca tatttcttat     540
aatcatagca ataccacagg tggctataag tatgatatca cctttgatga aggcggcaag     600
gtgactaata ttcaagaaaa agatttggat aaggtttatg aagttcagct aaaatcagaa     660
aatactgcag ctcaaaataa tgagattctt aaacaagctt ttgcatatgc taaacaacat     720
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gttgaaggat cggcttattg gtttgctttt gcaactggga catcagctag tgatggtgta     900
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gtttgggatg gtgggttgat aaaggctatt gatccaaatt atgaaaatta taataaagag    1260
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tatgccaatt ctatcagtta a                                              1521
<212> Type : DNA
<211> Length : 1521
      SequenceName : SEQ ID 736
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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tcttatacgg cagcagatac agaggataat caggtaacga ttagccatta taatgaacag     120
gctggaactt ttgatgtcaa cgctgtacag gcagccaacg gaaaaactat tcaatcgata     180
gatgttgcga tttggtctga agaaaatggg caggatgatt tgaaatggta tcatgccagt     240
aatgatggca gcaatcaatt gacagttcat tttaatgctg agaatcatgg cagtaaggta     300
ggttcttata ttgcgcatgc ttatattacc tatacagatg gtaatcgagt cggggttaat     360
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gatgagaatg gtcaagatga tcttcattgg tacacggcag atgctgacgg gaatactttg    540
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gaaacagata attcaaaagc gatacaatca atcagtgctg ctgtttggtc tgatgctaac   1080
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cacgttgaga gtaataaccg tattcaagtg aaagaagcta attataagaa tcaacaatat   1560
atttccaatt ttcgcggatg gtttgatccc acgacttcct atttgggaag attaacttat   1620
atttatcctg actaa                                                    1635
<212> Type : DNA
<211> Length : 1635
      SequenceName : SEQ ID 737
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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aaacgtccga ctgaacatat caaaacaggt ttttcagcac tgcaaaagag tgttgctatt    120
atcgctggta ttttagggat tattaccgct ttgattacta ttaataatta tcgcaatagt    180
tcacacaatg ataaaaaaga ttccacatct aaaaccacta tcatcaaaga aaaagaagtg    240
gatgactcaa atagtaacaa caatgctgct aattctcaag ctgaaaatga cagcaataac    300
aataataatt ctgcagaatc aaatcaaaac caaactgcaa caacagcaaa tgacagtaac    360
agcaattcgg ctaatcaaaa tcaagccaat agccaatcac aagcaaataa tcagcaaaat    420
caaaacaatg ctaatgctgg tcaataa                                        447
<212> Type : DNA
<211> Length : 447
      SequenceName : SEQ ID 738
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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gacacaacag cttttagcgg ttttggaacc attcgaaaca acacagctct aaaacagagc    120
actaactgcg ctagctggtt caatcgtttt ggaaccattc gaaacaacac agctctaaaa    180
ctcaccatat taattaatgg cgtttccttt tgttttggaa ccattcgaaa caacacagct    240
ctaaaacctc gtggaccaat ttttgtctcg acatttcgta atcgcgccat tcatctcagc    300
cagatttcag cttcaaaatg a                                              321
<212> Type : DNA
<211> Length : 321
      SequenceName : SEQ ID 739
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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ataggatgct caatgcagaa aaaaaccaaa tcagaaagca gctcgacttc tcaaaagact    120
actttacaaa caaaacagtc aagtgaaaaa tcaactgatg ctaagcaaac gacagaagct    180
cattcagaaa gcagtcagtc ttcttctcat tctaataacg aggaaaccct tgctcccatt    240
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gatacaggcg ctgttttaaa ggctgattac agtagtatgg caggaacttg gaaaaatgaa      300
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ctgttgaaca ttgatcaaga cggaaatctt ttgttaaatg ttgagactgg aacaaaaaag      420
aatctaactc tttatattgt gccagccaat aaaaccttat ctaatcaata tttttctaat      480
ggtcaaagcg atgaatccga taaaacaaaa gatcgtattg tttcttctga gagtttaaat      540
agtggcaaat ttacaaaccg agtttattat catgtttcaa ctcattaa                   588
<212> Type : DNA
<211> Length : 588
      SequenceName : SEQ ID 740
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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ataagtaaag caagttctaa aaaatcacaa acaagcactt cttctgttat gacaagtagt      180
cgaaaagcta ctgaacaaac aagccaagca cagactcaaa gtcaatcaca agcagaacaa      240
agtaacccta atgtgatcct ccccattccg caagaattag tcggcaccta caaaggttcg      300
agtccacaag catctgaaat aacttttacc atttcttcaa atggtcaatt acgtgctcaa      360
gctaattttg atcctgcttc tgatataaat gacgttaccg ccactgttag tggtgttaga      420
aaagtcgggg cagataccta tatttgggag tttgtctctg gtagttcagc tgctctttta      480
ccgggtgtta caggtatagg agggcttgga aagatgcagc ctggtttcat cctaaaaggg      540
gggcaattaa cacctatcat gtttacaggt tctgtagatg gtgaaattga ttattcacat      600
cccaatccct atccagtatc attaaacaag cagtaa                                636
<212> Type : DNA
<211> Length : 636
      SequenceName : SEQ ID 741
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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agcaatagca gtaccgggga aaaaacaagt caatcatctg aagagactaa ggtccgatta      120
attgttaaaa cggattctaa taaaaccgat gaaaaagtcg ctttcaaaaa aggtgctact      180
gttatggatg tcttaaaaga caactataaa gttaaagaaa gcggtggttt tatcactact      240
attgatggtg tcactcagga taaaaaagca ggtaggtact ggatgtttga tgttaatgat      300
aagctggcat caaaagctgc tgataagatt aaggtcaaaa atggggataa aattgaattt      360
tatttgaaag tttataaagg taagaactag                                       390
<212> Type : DNA
<211> Length : 390
      SequenceName : SEQ ID 742
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
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acaagaaatt caaaggatgc tagtattatc agtacaccta ttttaacaat cctattgagc      120
ctctttttct tgattattat tggtatttta ttttttgtac tttatacttc aaatggtgga      180
agcaatgaaa aagcagccac ttcgggtttc tatagttctt ccaaaacggt caaaaaagcc      240
aaaaatgagg caaatagtca aactgatgaa cagacaacag aagcagaaac aagttcaagt      300
gaaacgacaa gttcctcttc agacagtgat ggcgagacaa ttacagttca aggaggtgaa      360
ggggctgcag caattgctgc gcgtgcgggt atttctgttg ataaactcta tgagctgaat      420
ccagaacata tgacgcatgg ctattggtat gctaaccctg gagataacat caagattaag      480
taa                                                                    483
<212> Type : DNA
<211> Length : 483
      SequenceName : SEQ ID 743
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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attactttgg aaacaggaga atttgcttat attcaacgcg gtagcatggt ctatcacaca     120
cccagtgtca ctctcaatac caaagtcaat ggacgtggtt caggacttgg caagctagta     180
ggagcaattg gtcgttctgt aacgtctgga gaaagttttt tcattactca ggcagtatca     240
aatgctagcg atggtaaatt ggccttggcc ccttctatgc cgggccaagt tattgcttta     300
gaattgggag aaaaacaata tcgcctcaat gatggtgctt ttcttgcctt agatggttct     360
gctcaatatc aaatgaaagc tcagagtgtt ggacgtgccc tttttggcgg tcaaggcggt     420
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agtagggatt tgaactatga cattcatttg gaaaatggct ttatgcaatc gatcggaacc     600
ggtgaaggcg ttgtcaatac tttccgagga acgggtgaaa tttatgtaca aagtcttaat     660
ctgcagcagt ttgctggtgt cctacagggt ttcattacca atactaatcg ttaa           714

<212> Type : DNA
<211> Length : 714
      SequenceName : SEQ ID 744
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus mutans UA159
<400> PreSequenceString :
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attgctttta tcccgggatt tcatattttc tttagcaaca tgttgatgtt ggccctgttc     120
tttatgttaa tagctttgag taacaggagt atcttctttt tctttctagc cttaggtttt     180
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ggtataatca ttatcggcgt tattttaaac agtttcctca aaccacacta ttcttattct     300
tataaaggaa atcattattt taatatgaaa caacatgcta actacattga taacgaaaca     360
gatgtctttt taaaaacact tttttctgaa aataccagtt atgtgacttc tcaagaatta     420
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atgggatctc taaacattca atattaa                                         687
<212> Type : DNA
<211> Length : 687
      SequenceName : SEQ ID 745
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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gtatttgctc catcatttgt atctgctcaa gaatcatcaa cttacactgt taaagaaggt     120
gatacacttt cagaaatcgc tgaaactcac aacacaacag ttgaaaaatt ggcagaaaac     180
aaccacattg ataacattca tttgatttat gttgatcaag agttggttat cgatggccct     240
gtagcgcctg ttgcaacacc agcgccagct acttatgcgg caccagccgc tcaagatgaa     300
actgtttcag ctccagtagc agaaactcca gtagtaagtg aaacagttgt ttcaactgta     360
agcggatctg aagcagaagc caaagaatgg atcgctcaaa aagaatcagg tggtagctat     420
acagctacaa atggacgtta tatcggacgt tacggttcat ggactgctgc taaaaacttc     480
tggcttaaca atggctggta ttaa                                            504
<212> Type : DNA
<211> Length : 504
      SequenceName : SEQ ID 746
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pneumoniae R6
<400> PreSequenceString :
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gcagctagtg tccaaacagt acaagcggaa gaaaacaaac aagaaactac caatagtatt     180
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aaaacctatg cagctccaac tgtagctaat ccagtagaaa cgactccagt taaaactgaa   300
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Sequence
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<212> Type : DNA
<211> Length : 1143
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Sequence
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<213> OrganismName : Streptococcus pneumoniae R6
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Sequence
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<212> Type : DNA
<211> Length : 408
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Sequence
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<213> OrganismName : Streptococcus pneumoniae R6
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<212> Type : DNA
<211> Length : 5304
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      SequenceDescription :

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<211> Length : 1353
      SequenceName : SEQ ID 752
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Sequence
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<212> Type : DNA
<211> Length : 6048
      SequenceName : SEQ ID 753
      SequenceDescription :

Sequence
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<213> OrganismName : Neisseria meningitidis serogroup A strain Z2491
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gcggttggca ttgagcctaa caaagccgac catgcccaag tcttatcggc cattaaaacg      180
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<212> Type : DNA
<211> Length : 2283
      SequenceName : SEQ ID 754
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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cccaaaaagg tcatcaaaac atttgaccaa ataactgctc ttgatattga cagttctgcc     180
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<212> Type : DNA
<211> Length : 1083
      SequenceName : SEQ ID 755
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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gctaagaagt cagaaagtaa aatggtaaca atcgacaagg ctccaaaaaa taatcatgct     180
attactaaag aagaaagcaa agaaaaagca aagagcattg cttcggagcc tattcccaca     240
gtagaaaact ctgtagctcc gacagtaaca gaggaagcac cggttgttca gcaagaagtg     300
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aatggaaata ctgctggtat tgtaggaagt caagcggcgg cacagatggc agcagcaaca     420
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gcagctaatg cttctggggc atcagggttg ttccagacaa tgccaggttg ggggttctaca   540
gcaacggttg aagatcaagt caatgcagcc ttgaaagcct atagtgcaca aggtttatca     600
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<212> Type : DNA
<211> Length : 615
      SequenceName : SEQ ID 756
      SequenceDescription :

Sequence
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<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :
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<212> Type : DNA
<211> Length : 2274
SequenceName : SEQ ID 757
SequenceDescription :

Sequence

<213> OrganismName : Streptococcus pyogenes strain MGAS8232
<400> PreSequenceString :

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cttggcaata ccataatcaa aaagctacag gtcgaggatg acaatacaat gcacgacttt     180
gtaaagccta aagttaccac tcaacaagct tttggactag ctcagcaggt caaagagctt     240
gatttacagc taaaagaccc taagtcagat ttgtggggca aaatcaagtt caataataag     300
gcaatgctag tcgagtacgc caacaaagag atgtcaagtg ccattgcgca atcagctgag     360
cagatattgt tacaagtcaa gtctattgat gatgaacgat attccaaatt tgagcaaact     420
ctgaatggta tcaaacaaac tgtcaaaagt gagtcagttg aatccgcacg tactcagcta     480
gcatcaatgt ttgatagtcg tattagtgga cttgatggca aatacagtcg tttgagccaa     540
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(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
18 August 2005 (18.08.2005)

PCT

(10) International Publication Number
WO 2005/076010 A3

(51) International Patent Classification:
G06F 19/00 (2006.01) ***G01N 33/68*** (2006.01)

(21) International Application Number: PCT/IN2005/000037

(22) International Filing Date: 7 February 2005 (07.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

173/DEL/2004	6 February 2004 (06.02.2004)	IN
60/589,227	20 July 2004 (20.07.2004)	US

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(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **SACHDEVA, Gaurav** [IN/IN]; Institute of Genomics and Integrative Biology, Mall Road, Dehli 110 007 (IN). **KUMAR, Kaushal** [IN/IN]; Institute of Genomics and Integrative Biology, Mall Road, Dehli 110 007 (IN). **JAIN, Preti** [IN/IN]; Institute of Genomics and Integrative Biology, Mall Road, Dehli 110 007 (IN). **BRAHMACHARI, Samir, Kumar** [IN/IN]; Institute of Genomics and Integrative Biology, Mall Road, New Delhi 110 007 (IN). **RAMACHANDRAN, Srinivasan** [IN/IN]; Institute of Genomics and Integrative Biology, Mall Road, Dehli 110 007 (IN).

(74) Agents: BHOLA, Ravi et al.; K & S Partners, 84-C, C6 Lane, Off Central Avenue, Sainik Farms, New Delhi 110 067 (IN).

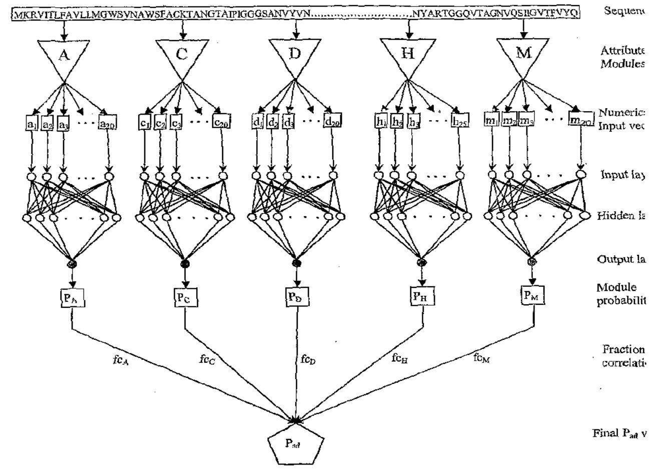
(81) Designated States *(unless otherwise indicated, for every kind of national protection available)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) Title: COMPUTATIONAL METHOD FOR IDENTIFYING ADHESIN AND ADHESIN-LIKE PROTEINS OF THERAPEUTIC POTENTIAL

The Neural Network architecture



(57) Abstract: A computational method for identifying adhesin and adhesin-like proteins, said method comprising steps of computing the sequence-based attributes of a neural network software wherein the attributes are (i) amino acid frequencies, (ii) multiplet frequency, (iii) dipeptide frequencies, (iv) charge composition, and (v) hydrophobic composition, training the artificial neural Network (ANN) for each of the computed five attributes, and identifying the adhesin and adhesin-like proteins having probability of being an adhesin (P_{ad}) as ≥ 0.51; a computer system for performing the method; and genes and proteins encoding adhesin and adhesin-like proteins.

WO 2005/076010 A3

Declaration under Rule 4.17:

— *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))*

Published:

— *with international search report*

(88) Date of publication of the international search report: 27 April 2006

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International Application No
PCT/IN2005/000037

A. CLASSIFICATION OF SUBJECT MATTER
G06F19/00 G01N33/68

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
G06F G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, BIOSIS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	ZUEGGE J ET AL: "Deciphering apicoplast targeting signals - feature extraction from nuclear-encoded precursors of Plasmodium falciparum apicoplast proteins" GENE: AN INTERNATIONAL JOURNAL ON GENES AND GENOMES, ELSEVIER, AMSTERDAM, NL, vol. 280, no. 1-2, 12 December 2001 (2001-12-12), pages 19-26, XP004313161 ISSN: 0378-1119 the whole document ----- -/--	1-13, 18-21

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search 11 November 2005	Date of mailing of the international search report 02. 01. 2006
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer Lüdemann, S

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	BRADLEY PHIL ET AL: "BETAWRAP: Successful prediction of parallel beta-helices from primary sequence reveals an association with many microbial pathogens" PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA, vol. 98, no. 26, 18 December 2001 (2001-12-18), pages 14819-14824, XP002350912 ISSN: 0027-8424 the whole document -----	1-13, 18-21
A	FINLAY R BRETT ET AL: "Common themes in microbial pathogenicity revisited" MICROBIOLOGY AND MOLECULAR BIOLOGY REVIEWS, vol. 61, no. 2, 1997, pages 136-169, XP002350913 ISSN: 1092-2172 the whole document -----	1-13, 18-21
P,X	SACHDEVA GAURAV ET AL: "SPAAN: a software program for prediction of adhesins and adhesin-like proteins using neural networks" BIOINFORMATICS (OXFORD), vol. 21, no. 4, 15 February 2005 (2005-02-15), pages 483-491, XP002350914 ISSN: 1367-4803 the whole document -----	1-13, 18-21
E	WO 2005/057464 A (COUNCIL OF SCIENTIFIC AND INDUSTRIAL RESEARCH; BRAHMACHARI, SAMIR, KUM) 23 June 2005 (2005-06-23) the whole document -----	1-13, 18-21

INTERNATIONAL SEARCH REPORT

International application No.
PCT/IN2005/000037

Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. ☐ Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.

2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.

3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:

4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-13, 18-21

Remark on Protest

☐ The additional search fees were accompanied by the applicant's protest.

☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

Invention 1: claims 1-13, 18-21

A computational method for identifying adhesin and adhesin-like proteins comprising the steps of claim 1.

Invention 2-275: claim 14

A set of 274 annotated genes encoding adhesin and adhesin-like proteins, having seq. id nos. 385 to 658.

Invention 276-380: claim 15

A set of 105 hypthetical genes encoding adhesin and adhesin-like proteins, having seq. id nos. 659 to 763.

Invention 381-659: claim 16

A set of 279 annotated adhesin and adhesin-like proteins, having seq. id nos. 1 to 279.

Invention 660-764: claim 17

A set of 105 hypothetical adhesin and adhesin-like proteins, having seq. id nos. 280 to 384.

INTERNATIONAL SEARCH REPORT

Information on patent family members

Int onal Application No

PCT/IN2005/000037

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2005057464 A	23-06-2005	US 2005136480 A1	23-06-2005